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2023-2024 CATALOG

2023-2024 Academic Year

General Catalog Expiration Date: Last day of the spring 2029 semester

The University of Idaho is accredited by the Northwest Commission on Colleges and Universities.

Accreditation of an institution of higher education by the Northwest Commission on Colleges and Universities indicates that it meets or exceeds criteria for the assessment of institutional quality evaluated through a peer review process. An accredited college or university is one which has available the necessary resources to achieve its stated purposes through appropriate educational programs, is substantially doing so, and gives reasonable evidence that it will continue to do so in the foreseeable future. Institutional integrity is also addressed through accreditation.

Accreditation by the Northwest Commission on Colleges and Universities is not partial but applies to the institution as a whole. As such, it is not a guarantee of every course or program offered, or the competence of individual graduates. Rather, it provides reasonable assurance about the quality of opportunities available to students who attend the institution.

Inquiries regarding an institution's accredited status by the Northwest Commission on Colleges and Universities should be directed to the administrative staff of the institution. Individuals may also contact:

Northwest Commission on College and Universities
8060 165th Avenue N.E., Suite 100
Redmond, WA 98052 425-558-4224

www.nwccu.org (<http://www.nwccu.org>)

ACADEMIC CALENDAR

Dates in this calendar are subject to change without notice. Dates appearing in admission and registration instructions take precedence over those listed below.

Summer 2023

Date	Event
Monday, May 15	Beginning of Session I
Monday, May 22	Beginning of Session I - Alternate 6 weeks
Monday, May 29	Memorial Day - Classes DO NOT meet
Monday, June 12	Beginning of Session II
Monday, June 19	Juneteenth - Classes DO NOT meet
Monday, June 26	Beginning of Session III - 6 weeks
Tuesday, July 4	Independence Day - Classes DO NOT meet
Monday, July 10	Beginning of Session III - 4 weeks
Friday, August 4	Close of Summer Session
Tuesday, August 8	Final grades due by 12:00 pm

Fall Semester 2023

Date	Event
Monday, August 21	Classes begin
	WSU Co-op classes begin
	Last day to pay tuition without late fees
Friday, September 1	Last day to add a course with instructor permission
	Last day to receive refund of tuition & fees
	Last day to drop a course without having a grade of 'W' recorded
Monday, September 4	Labor Day – Classes DO NOT meet
Wednesday, September 6	WWAMI classes begin
Friday, September 22	Last day to withdraw from early 8 week classes
Mon-Fri, October 9-13	Midterm Exam Week
Monday, October 16	Beginning of late 8 week classes
Friday, October 27	Last day to withdraw from a course or from the university
Monday, October 30	Winter Intersession registration opens
Mon-Fri, November 6-17	Spring registration opens
Mon-Fri, November 20-24	Fall recess - Classes DO NOT meet
Mon-Fri, December 4-8	No exam week
Mon-Fri, December 4-15	College of Law final examinations
Saturday, December 9	Fall Commencement
Mon-Fri, December 11-15	Final exams
Friday, December 15	Close of Fall Semester
Tuesday, December 19	Final grades due by 12:00 pm

Winter Intersession 2023-24

Date	Event
Saturday, December 16	Classes begin
Monday, December 18	Last day to add or drop classes
Friday, December 22	Last day to withdraw from classes
December 22-29	Holiday Break - UI CLOSED
Tuesday, January 9	Close of Intersession
Friday, January 12	Final grades due by 12:00 pm

Spring Semester 2024

Date	Event
Wednesday, January 4	WWAMI Program begins
Monday, January 8	Law classes begin
	WSU Co-op courses begin
Wednesday, January 10	Classes begin
	Last day to pay tuition without late fees
Monday, January 15	Martin Luther King/Idaho Human Rights Day – Classes DO NOT meet
Thursday, January 18	Last day to add or change semester classes without permission
	Last day to add or drop early 8 week classes
	Last day to submit drop for nonattendance requests
Wednesday, January 24	Last day to add a course with instructor permission
	Last day to drop a course without having a grade of 'W' recorded
	Last day to receive refund of tuition and fees
	Last day to apply for spring graduation without late fees
Friday, February 16	Last day to withdraw from early 8 week classes
Monday, February 19	Presidents' Day – Classes DO NOT meet
Mon-Fri, March 4-8	Midterm Exam Week
Mon-Fri, March 11-15	Spring recess
Monday, March 18	Late 8 week classes begin
Friday, March 22	Last day to add or drop late 8 week classes
Friday, March 29	Last day to withdraw from a course or from the university
Monday, April 1	Summer registration opens
Mon-Fri, April 8-19	Fall registration opens
Friday, April 19	Last day to withdraw from late 8 week classes
Mon-Fri, April 29-May 3	Spring no exam week
Mon-Fri, April 29-May 10	College of Law final exams
Mon-Fri, May 6-10	Final exams
Friday, May 10	Close of Spring semester
	Last day to apply for summer graduation without late fee
Saturday, May 11	Spring Commencement
Tuesday, May 14	Final grades due by 12:00 pm

THE UNIVERSITY

The University of Idaho is a land-grant research institution founded in 1889 by a statute of the 15th territorial legislature. Commonly known as the university charter, this statute became part of the state constitution when Idaho was admitted to the Union in 1890. The university's intimate campus, statewide laboratories, extension centers, outreach programs, and passionate faculty provide aspiring leaders with opportunities to challenge themselves and address pressing national problems. The University of Idaho supports initiatives to improve the quality of life of all Idaho citizens, create a sustainable American West, and secure the economic progress of the world.

The university community has implemented a strategic plan to further the institution's vision. With the support of units across campus, this 2016-2025 Strategic Plan fulfills the promise of a 21st century land-grant institution to lead and inspire Idaho, the nation, and the world. Students, faculty, and staff at the University of Idaho participate in building a community that respects individuality and provides access and inclusion for all members of the Vandal family.

The university is a publicly supported institution with principal responsibility in Idaho for performing research and granting the Doctor of Philosophy (PhD) degree. The liberal arts and sciences, offered through the College of Letters, Arts and Social Science and the College of Science, are the heart of the university's educational programs. The primary areas of statewide responsibility are agriculture, natural resources, engineering, medical and veterinary education, architecture, and law with programs in liberal arts, sciences, education, business and economics. In addition, the University Library and the Law Library contain over two million books, bound periodicals, microforms, and U.S. government publications. These resources - together with the libraries at Washington State University (eight miles to the west) - equal those of major metropolitan areas.

To assist with its statewide mission, the university maintains resident instruction centers in Coeur d'Alene, Boise, and Idaho Falls, extension offices in 42 of Idaho's 44 counties, research and extension centers in Aberdeen, Caldwell, Dubois, Idaho Falls, Kimberly, Moscow, Parma, Salmon, Sandpoint, Teton, and Twin Falls, and field stations at McCall, Point Springs, and the Taylor Ranch in central Idaho. Through international programs, the university extends its services to many other countries.

Nearly 12,000 students from all states and more than 90 foreign countries choose programs from a vast array of disciplines. Strong undergraduate programs are coupled with nationally recognized research and scholarly achievements. The university has granted more than 100,000 degrees since its founding. Student and research success comes through the efforts of more than 920 faculty members in teaching and research, and 2,200 staff and professional personnel who work at more than 70 locations covering more than 10,000 acres.

The university is proud of its friendly campus atmosphere and sense of community. The feeling of camaraderie that pervades the campus extends to Moscow, the university's "hometown." It is a thriving community of nearly 24,000 located in the northern part of the state about 90 miles southeast of Spokane, Washington.

Moscow is the gateway to a natural wonderland. The surrounding Palouse hills and the mountains and lakes of northern Idaho provide a scenic background for university facilities. Skiing, boating, and other outdoor recreation resources are available within easy driving distance.

They include the Sawtooth and Hells Canyon national recreation areas, Frank Church River of No Return Wilderness, and scenic rivers such as the Snake, Clearwater, Salmon, Lochsa, and Selway.

The university is a member of the National Association of State Universities and Land-Grant Colleges and is accredited by the Northwest Commission on Colleges and Universities. Additional approval or accreditation for specific programs has been granted by the following organizations:

- AACSB International (AACSB)
 - College of Business
 - Accounting (B.S.Bus.)
 - Business Economics (B.S.Bus.)
 - Finance (B.S.Bus.)
 - Management Information Systems (B.S.Bus.)
 - Management and Human Resources (B.S.Bus.)
 - Marketing (B.S.Bus.)
 - Operations and Supply Chain Management (B.S.Bus.)
 - Accountancy (M.Acct.)
 - General Management (M.B.A.)
- ABET Computing Accreditation Association
 - Computer Science (B.S.C.S.)
- American Bar Association (ABA)
 - College of Law
 - Law (J.D.)
- The Accrediting Council on Education in Journalism and Mass Communications (ACEJMC)
 - Advertising (B.A. and B.S.)
 - Broadcasting and Digital Media (B.A. and B.S.)
 - Journalism (B.A. and B.S.)
 - Public Relations (B.A. and B.S.)
- Accreditation Council on Education in Nutrition and Dietetics (ACEND)
 - Dietetics (M.S.) - candidacy for accreditation
- American Chemical Society (ACS)
 - Chemistry (B.S.)
- Association for Fire Ecology (AFE)
 - Fire Ecology and Management (B.S.Fire.Ecol.Mgmt.)
- American Society for Engineering Management
 - Engineering Management (M.Engr.)
- The Association of Technology, Management, and Applied Engineering (ATMAE)
 - Industrial Technology (B.S.Tech.)
- The Commission on Accreditation of Athletic Training Education
 - Athletic Training (M.S.A.T.)
- Council for the Accreditation of Educator Preparation (formerly NCATE, also covers PSC)
 - Career and Technical Education (B.S.Ed.)
 - Elementary Education (B.S.Ed.)
 - Secondary Education (B.S.Ed.)
 - Educational Leadership (M.Ed., Ed.S.Ed.Ldrshp.)
 - Physical Education (M.Ed.)
 - Special Education (M.Ed.)
 - Agricultural Education (B.S.Ag.Ed., M.S.)

- Early Childhood Education (B.S.)
- Music Education (B.Mus.)
- Council for Interior Design Accreditation (CIDA)
 - Interior Architecture and Design (B.I.A.D.)
- The Commission on English Language Accreditation (CEA)
 - American Language and Culture Program
- The Council on Accreditation of Parks, Recreation, Tourism and Related Professionals (COAPRT)
 - Recreation (B.S.Rec.)
- Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET) - undergraduate programs only
 - Chemical Engineering (B.S.Ch.E.)
 - Computer Engineering (B.S.Comp.E.)
 - Electrical Engineering (B.S.E.E.)
 - Industrial Technology (B.S.Tech.)
 - Mechanical Engineering (B.S.M.E.)
- IDeA Network of Biomedical Research Excellence External Advisory Committee (INBRE EAC)/NIH
 - Idaho INBRE (ID-INBRE)
- Institute of Food Technologists (IFT)
 - Food Science (B.S.F.S.)
- Landscape Architecture Accrediting Board (LAAB)
 - Landscape Architecture (M.L.A.)
- National Alliance of Concurrent Enrollment Partnerships (NACEP)
 - Dual Credit Program
- National Architectural Accrediting Board (NAAB)
 - Architecture (M.Arch.)
- National Association of Schools of Art and Design (NASAD)
 - Art (B.A., M.F.A.)
 - Studio Art and Design (B.F.A.)
 - Virtual Technology and Design (B.S.)
- National Association of Schools of Music (NASM)
 - Music (B.A. and B.S.)
 - Music: Business (B.Mus.)
 - Music: Composition (B.Mus.)
 - Music Education (B.Mus.)
 - Music: Performance (B.Mus.)
- National Council for Family Relations (NCFR) and Certified Family Life Educator (CFLE)
 - Family and Consumer Studies (M.S.)
 - Human Development and Family Studies (B.S.)
 - Early Childhood Education (B.S.)
- Professional Golfers Association (PGA)
 - Marketing (B.S.Bus.) - PGA Golf Management
 - Business Economics (B.S.Bus.) - PGA Golf Management
 - Finance (B.S.Bus.) - PGA Golf Management
 - Management and Information Systems (B.S.Bus.) - PGA Golf Management
 - Operations and Supply Chain Management (B.S.Bus.) - PGA Golf Management
 - Management and Human Resources (B.S.Bus.) - PGA Golf Management
- Society of American Foresters (SAF) Committee on Accreditation (COA)
 - Forestry (B.S.Forestry)
- Society for Range Management (SRM)

- Rangeland Conservation (B.S.Rangeland.Consv.)
- Society of Wood Science and Technology (SWST)
 - Forest and Sustainable Products (B.S.)

SBOE Mission Statement - University of Idaho

The University of Idaho is the state's land-grant research university. From that distinctive origin, we will enhance the scientific, economic, social, legal, and cultural assets of our state and develop solutions for complex problems facing our society. We will continue to deliver excellence in teaching, research, and outreach in a collaborative environment at our residential main campus in Moscow, regional centers, extension offices, and research facilities across Idaho. Consistent with the land-grant ideal, we will ensure that our outreach activities serve the state and strengthen our teaching, scholarly, and creative capacities statewide.

The University of Idaho will shape the future through innovative thinking, transformative education, and community engagement.

Our educational offerings will transform the lives of our students through engaged learning and self-reflection.

Our teaching and learning will include undergraduate, graduate, professional, and continuing education offered through face-to-face instruction, technology-enabled delivery, and hands-on experience.

Our educational programs will strive for excellence and will be enriched by the knowledge, collaboration, diversity, and creativity of our faculty, students, and staff.

Vision

The University of Idaho will expand the institution's intellectual and economic impact and make higher education relevant and accessible to qualified students of all backgrounds.

Exceptional research universities such as the University of Idaho prepare students not just with today's knowledge, but also with the ability to discover new frontiers and construct the future. We educate students at the undergraduate, graduate, and professional levels to meet the needs of Idaho and the world. We improve lives through research, scholarship, and creative activity.

As Idaho's land-grant university, the University of Idaho will maintain its current leadership in research and engagement with Idaho communities. We will continue to provide leading graduate and professional education including enhanced production of doctoral, master's, and professional degrees. The University of Idaho will become a Carnegie R1 (Highest Research Activity) institution known for excellence in our areas of strength and recognized for interdisciplinary research.

The University of Idaho will serve any qualified student by providing access to unique educational experiences. The university will enroll a mix of resident and nonresident (including international) students at the graduate and undergraduate levels. Our resident students will represent a cross-section of Idaho in ethnic, socioeconomic, and demographic terms. We will augment discipline-specific learning with a strong foundation in the liberal arts.

The university will excel in student success as measured by the transformative educational experience, the achievement of student learning outcomes, retention and graduation rates, and career outcomes.

Other measures of student engagement and learning will include the National Survey of Student Engagement (NSSE). The university will engage and lead across the state in an effort to help Idaho achieve its goal of 60 percent post-secondary education attainment. To achieve this goal, undergraduate enrollment and graduates will increase 50 percent over current levels. The university will be a purpose-driven organization, a vibrant intellectual community that attracts, retains, and develops great faculty and staff. We will achieve this outcome by using our existing resources effectively, generating additional resources, and improving our physical and professional environment.

Principles and Values

Excellence

Individual commitment to excellence is central to the values we promote. We value the purposeful pursuit of knowledge that improves our communities and prepares us for a lifetime of service. In pursuit of this, we seek to foster a culture of leadership, excellence, and celebration.

Respect

Central to our productivity and morale is a climate that is considerate and respectful. The University of Idaho is an extensive and diverse community of people from varied backgrounds and beliefs. We welcome the viewpoints and contributions of everyone in our community. We believe that an institution is only as strong as its ability to include diverse perspectives that critically contribute to the University of Idaho's mission.

Integrity

We believe that adherence to and a shared understanding of ethical principles is necessary for effective collaboration within an educational community. The University of Idaho is committed to internal congruence as well as openness and transparency in decision-making and leadership.

Perseverance

The University of Idaho is a community that is brave and bold in our pursuit of higher aspirations, always pushing to offer the best opportunities and environment for our students, faculty, staff, and community. We are confident in our ability to succeed and have demonstrated long-term discipline to achieve our goals.

Sustainability

We embrace our personal obligation to ensure the sustainability of our future. Promoting healthy lifestyles is part of our effort to encourage stewardship of the natural environment.

Regents and Administration

Board of Regents

Kurt Liebich, *President, IRSA Chair*, Boise
 David Hill, *Vice President, BAHR Chair*, Boise
 Linda Clark, *Secretary, PPGA Chair*, Meridian
 Bill Gilbert, *Audit Committee Chair*, Boise
 Shawn Keough, Sandpoint
 Cally J. Roach, *Retirement Plan Committee Chair*, Fairfield
 Cindy Siddoway, Terreton
 Sherri Ybarra, *State Superintendent of Public Instruction*, Mountain Home

University Administration

C. Scott Green, Ph.D., *President*
 Torrey Lawrence, D.M.A., *Provost and Executive Vice President*
 Yolanda Bisbee, Ed.D., *Chief Diversity Officer & Executive Director of Tribal Relations*
 Brian Foisy, M.Acct., *Vice President for Finance and Administration*
 Mary Kay McFadden, E.M.B.A., *Vice President for University Advancement*
 Dan Ewart, M.P.A., *Vice President for Information Technology/CIO*
 Christopher T. Nomura, Ph.D., *Vice President for Research & Economic Development*
 Dean Kahler, Ph.D., *Vice Provost for Strategic Enrollment Management*
 Dean Panttaja, Ph.D., *Interim Vice Provost for Academic Initiatives*
 Diane Kelly-Riley, *Vice Provost for Faculty*
 Director of Institutional Effectiveness and Accreditation
 Blaine Eckles, Ph.D., *Dean of Students and Vice Provost for Student Affairs*
 Jeff Seegmiller, Ed.D., *WWAMI Medical Education Program Executive Officer, Southwest Idaho*
 Lee Ostrom, Ph.D., *Executive Officer, Southeast Idaho*
 Larry Stauffer, Ph.D., *Executive Officer, Northern Idaho*
 Ben Hunter, M.S., *Dean – University Libraries*
 Lindsey Brown, Ph.D., *University Registrar*
 Randi Croyle, M.Ed., *Director of Student Financial Aid*

Colleges

Agricultural and Life Sciences – Michael Parrella, Ph.D., *Dean*
 Art and Architecture – Shauna Corry, Ph.D., *Dean*
 Business and Economics – Marc Chopin, Ph.D., *Dean*
 Education – Philip W. Scruggs, Ph.D., *Interim Dean*
 Engineering – John C. Crepeau, Ph.D., *Interim Dean*
 Graduate Studies – Jerry McMurtry, Ph.D., *Dean*
 Law – Johanna Kalb, J.D., *Dean*
 Letters, Arts, and Social Sciences – Sean Quinlan, Ph.D., *Dean*
 Natural Resources – Dennis Becker, Ph.D., *Dean*
 Science – Ginger Carney, Ph.D., *Dean*

Strategic Action Plan

2016-2025

INNOVATE: Scholarly and Creative work with impact

Goal 1: Scholarly and creative products of the highest quality and scope, resulting in significant positive impact for the region and the world

Objective A

Build a culture of collaboration that increases scholarly and creative productivity through interdisciplinary, regional, national, and global partnerships.

Indicators

Increases in research expenditures and scholarly/creative works derived from collaborative partnerships.

Objective B

Create, validate, and apply knowledge through the coproduction of scholarly and creative works by students, staff, faculty, and diverse external partners.

Indicators

Increased number of terminal degrees and non-faculty scholars (e.g. postdoctoral researchers), increased number of undergraduate and graduate students supported on extramural funds, and increased percentage of undergraduates participating in research.

Objective C

Grow reputation by increasing the range, number, type and size of external awards, exhibitions, publications, presentations, performances, contracts, commissions, and grants.

Indicators

Increase in above measures as well as invention disclosures.

ENGAGE: Outreach that inspires innovation and culture

Goal 2: Suggest and influence change that addresses societal needs and global issues, and advances economic development and culture

Objective A

Inventory and continuously assess engagement programs and select new opportunities and methods that provide solutions for societal or global issues, support economic drivers, and/or promote the advancement of culture.

Indicators

Number of University of Idaho Extension direct contacts with communities.

Objective B

Develop community, regional, national, and/or international collaborations which promote innovation and use University of Idaho research and creative expertise to address emerging issues.

Indicators

Number of active responses/programs in progress that seek to address the identified societal issues or collaborate with communities on research, the arts, or cultural enhancement as reflected by the percentage of faculty collaboration with communities (reported in HERI survey) as well as total economic impact assessment (EMSI).

Objective C

Engage individuals (alumni, friends, stakeholders, and collaborators), businesses, industry, agencies, and communities in meaningful and beneficial ways that support the University of Idaho's mission.

Indicators

National Survey on Student Engagement (NSSE) service learning metric, alumni participation rate, and dual credit engagement.

TRANSFORM: Educational experiences that improve lives.

Goal 3: Increase our educational impact

Objective A

Provide greater access to educational opportunities to meet the evolving needs of society.

Indicators

Total number of enrolled students and conferred degrees (both undergraduate and graduate).

Objective B

Foster educational excellence via curricular innovation and evolution.

Indicators

Increased retention, numbers of graduates, NSSE High Impact Practices score, and reductions in remediation via curricular innovation.

Objective C

Create an inclusive learning environment that encourages students to take an active role in their student experience.

Indicators

Measures educational parity and retention rates (for new and for transfer students).

CULTIVATE: A valued and diverse community

Goal 4: Foster an inclusive, diverse community of students, faculty, and staff and improve cohesion and morale

Objective A

Build an inclusive, diverse community that welcomes multicultural and international perspectives.

Indicators

Increased multicultural student enrollment, international student enrollment, and percent of multicultural faculty and staff.

Objective B

Enhance the University of Idaho's ability to compete for and retain outstanding scholars and skilled staff.

Indicators

Improved job satisfaction scores and reduced staff turnover rate.

Objective C

Improve efficiency, transparency and communication.

Indicators

Invest resources wisely to enhance end user experiences (e.g. more customer service oriented) and maintain affordability for students (cost per credit hour and SBOE efficiency measure).

Student/Program Assessment

Effective teaching and learning are essential to meeting our long-held goal of producing responsible, well-prepared citizens and leaders in their professions. Our program of student outcomes assessment has been implemented to ensure that we continually improve the teaching and learning process and the programs that support that process.

Learning outcomes are listed for courses on syllabi. Program learning outcomes for all degrees, certificates, and credentials are listed in the catalog and can be found on each program's individual page. Program learning outcomes are assessed annually by faculty to ensure students

are well-prepared for their intended field or path. The data is analyzed for program strengths and weaknesses and to identify opportunities to improve students' learning results.

Information vital to effective assessment includes evidence of student knowledge and skills learned within the program, as well as student opinions on the quality of university academic programs and services, and self-reports of learning. Students are an integral part of course and program assessment and are asked to participate in assessment activities; these include, but are not limited to, examinations, signature assignments, interviews, surveys, focus groups, and follow-up surveys after graduation.

General Honorary Societies

The university has long possessed nationally recognized marks of excellence, including chapters of national honorary and scholarship societies in practically every specialized field and chapters of the following general honorary societies: Phi Beta Kappa (since 1926), Phi Kappa Phi (since 1960), Sigma Xi (since 1922), and Golden Key (since 1990).

Phi Beta Kappa

To qualify for nomination to Phi Beta Kappa, a candidate must have a major in the College of Letters, Arts and Social Sciences or the College of Science. Juniors must have achieved a 3.90 UI cumulative GPA, have completed one full semester of the junior year, and have been in residence at least five semesters. All Phi Beta Kappa requirements must be completed prior to the semester in which they are elected. Seniors must have achieved a 3.80 UI cumulative GPA and be in residence at least 4 semesters at graduation or must have achieved a 3.70 UI cumulative GPA and be in residence at least 7 semesters at graduation. Nominees must have fulfilled the following distribution requirements: humanities and social sciences (16 total semester credits of humanities and social sciences, with no fewer than 7 semester credits of humanities and no fewer than 7 semester credits of social sciences); laboratory sciences and/or mathematics (10 semester credits); and foreign language (16 credits of a single foreign language through the intermediate level, or 4 full years of high school language). Double majors (CLASS or Science, plus another college) must complete a minimum of 90 liberal arts credits. In addition to these minimum requirements, candidates will be determined by other factors such as citizenship and scholastic rigor.

Phi Kappa Phi

To qualify for nomination by the local chapter of Phi Kappa Phi, a candidate must be:

1. registered at UI for at least one year and
2. enrolled in the final period of their junior year and rank scholastically in the upper 5 percent of the class or a senior enrolled in a course of study leading to a baccalaureate degree and rank scholastically in the upper 10 percent of their class.

Sigma Xi

To qualify for nomination to associate membership in Sigma Xi, a student must have shown marked aptitude for research in some field of pure or applied science. An associate member must have shown noteworthy achievement as an original investigator in some field of pure or applied science to qualify for nomination to full membership.

Golden Key National Honor Society

To qualify for membership in Golden Key, a student must have junior or senior standing and must have a cumulative grade-point average that falls in the top 15 percent of the junior and senior classes. Transfer students who have completed at least 25 semester credits at the University of Idaho and meet the grade-point average requirements also qualify for membership.

Libraries

The University Library and the Law Library hold over two million items. The libraries receive 65,000 serials in over 210 databases, provide access to approximately 11,000 electronic books and reference tools, add over 20,000 physical items annually to their collections, and maintain subscriptions to all Idaho newspapers and representative papers from around the U.S. The library is a regional depository for U.S. and Idaho state government documents, serves as the statewide clearinghouse for geospatial data, and is a designated Earth Science Information Center.

The libraries' collections emphasize the land-grant traditions of the basic sciences, agriculture, and the natural resources while maintaining supporting collections in the humanities and social sciences. Special Collections and Archives are rich in collections of Pacific Northwest and Idaho state history, including books, photographs, and historical maps. The archives contain personal papers and records of families, politicians, educators, authors, and business records of lumber companies, mines, and railroads. It is also home to the International Jazz Collections, which contain papers, photos, and recordings of jazz musicians and critics. The library has created and is developing digital images of many important resources, thus providing electronic access to such archives as the International Jazz Collections, the Barnard Stockbridge photographic collection, the Idaho Waters Digital Library, historic aerial photographs, and the Kooskia internment camp scrapbook.

The Law Library operates as the laboratory for the College of Law, housing materials in support of academic and research interests. Numbering over 250,000 volumes and volume equivalents, the collection has primary materials in the form of statutes and transcriptions for the federal system and all 50 states. Secondary materials, consisting of treatises, law reviews, and loose-leaf services, round out the American law collection. There is a working collection of United Kingdom and Canadian primary and secondary materials and a growing international law collection. The Law Library is also a selective federal documents depository. A variety of electronic legal databases are available for use by the University community and the general public.

The Law Library's special collections include records and briefs submitted to the Idaho Supreme Court and Court of Appeals, a historical collection of Idaho legislative and administrative legal materials, and the Clagett Collection, which consists of materials collected by Fred and Dorothy Clagett to support their research on the life and times of William H. Clagett, the president of Idaho's Constitutional Convention in 1889.

The library building was expanded and remodeled in 1993, providing structural opportunities to expand collections in the current facility. The library facility is open from 8 a.m. to midnight daily during the school terms, with a 24-hour study area. The library is home to the largest student computing lab on campus, with nearly 200 computers available to students, faculty, and staff. Electronic collections enable the library to offer services to students and faculty at all times, regardless of location.

There is a reciprocal use agreement between the University of Idaho Libraries and the Washington State University Libraries located in Pullman, eight miles away, giving students immediate access to the equivalent of library resources in many urban areas. Similar agreements exist with the Lewis-Clark State College Library, located in Lewiston; North Idaho College Library, located in Coeur d'Alene; and both Whitworth University Library and Gonzaga University Libraries, located in Spokane. The library cooperates with institutions throughout the Pacific Northwest and beyond. Electronic delivery services coupled with courier systems ensure rapid delivery of items held throughout the area.

Art Galleries

The University Art Galleries are northern Idaho's principal facilities emphasizing the visual arts. The University Gallery occupies the main floor of Ridenbaugh Hall on campus (corner of Blake Street and Campus Drive) and the Prichard Art Gallery is located at 414 S. Main Street in downtown Moscow, open year-round. During the academic year, the University Gallery displays the work of University undergraduate and graduate students studying in the disciplines of Art and Design, Architecture, and Landscape Architecture. All gallery programs and exhibitions are free and open to the public.

Through the galleries' rotation of exhibits, visitors may see examples of visual arts that include traditional and experimental art media and decorative and applied design. The galleries' objectives are to provide opportunities for local, regional, and national artists to exhibit their work, a means by which visitors' awareness and appreciation of the arts is heightened. The galleries also serve as an excellent teaching device. Outreach by the Prichard Art Gallery strengthens ties between the university and its communities.

In addition to exhibitions of work by artists of international, national, and regional repute, exhibitions mounted each year at the Prichard Art Gallery traditionally include those by faculty members and graduate students from the College of Letters, Arts and Social Sciences. In service of the university and the community, the Prichard hosts public receptions held in connection with some exhibitions, occasional musical performances, seminars with guest artists and lecturers, and the A.R.T. Gallery Connections Docent Program (K-12).

The gallery facilities and programs are administered through the College of Letters, Arts and Social Sciences.

Information Technology Services

ITS provides the university community with information technologies and support to complement its teaching, learning, research, telecommunications, and outreach activities, as well as serve administrative operations. The ITS main office is located in the Administration Building, Room 140, phone 208-885-2127.

Some services provided by ITS include the following:

- **The Student Technology Center**, which provides technical assistance for students through telephone, e-mail, and walk-in support. It can be visited at The Teaching and Learning Center (TLC) room 128 or reached at 208-885-HELP (208-885-4357) or support@uidaho.edu.
- **Student Computer Labs** with access to many computing labs and printers, including computer access for individuals with disabilities, located throughout the state. All labs are open during building hours. The labs offer a variety of standard and specialized software to meet the academic needs of all. These software applications

are available to all students, faculty, and staff at the University of Idaho. A NetID user account is required to login to a student computing lab workstation. Kiosk stations are located throughout the Moscow campus and can be accessed using the NetID username and password. These machines provide email, internet access, and printing services. For more information and access to VLab, see www.uidaho.edu/its/services/classroom. (<https://www.uidaho.edu/its/services/classroom/>)

- **The Campus Wireless Network**, available at locations statewide, including UI residences. Faculty, staff, and students are encouraged to use "AirVandalGold" or "eduroam." Guests are invited to use "AirVandalGuest."
- **Technology Enhanced Classrooms**, available for all uses, with most classrooms enabled for hybrid teaching over Zoom.
- **Information Security**, which offers tools and expertise for protecting university infrastructure and data.
- **Telephone Services** that provide complete telephone communication service and infrastructure support.
- **Enterprise Applications**, which provide database administration and development services for the University's ERP application and website content management systems, as well as custom development for web-based administrative applications.
- **Network and Systems** with services including Internet access, high-speed campus data network, wide-area network connecting university sites across Idaho, server-based personal and shared file space, Virtual Private Network (VPN), and print queues.
- **Document Imaging** that provides infrastructure for the scanning, retention, and management of documents related to university operations.
- **Vandal Card Pick-Up**, with the Vandal Card functioning as the official UI identification card for uses including personal on-campus transactions at enabled locations and access to university meal plans, the Student Recreation Center, and some UI facilities.
- **Records Management**, which provides physical storage along with guidance, training, and policy regarding the management and disposal of university records.
- **E-Commerce (Marketplace)** that supplies managed e-commerce services to the university community, including providing payment capabilities for UI developed web applications and third-party payment integration. E-Commerce also provides Banner-integrated online stores (UI Marketplace) for use by university colleges and departments for web-based commerce.

The ITS web page can be found online at www.uidaho.edu/its (<https://www.uidaho.edu/its/>). The website has links to a complete service catalog that provides detailed descriptions and contact information for all the services offered by ITS.

University of Idaho Nondiscrimination Policy

The University of Idaho has a policy of nondiscrimination on the basis of race, color, religion, national origin, sex, age, sexual orientation, gender identity/expression, disability, genetic information, or protected veteran or military status. This policy applies to all programs, services, and facilities. It includes—but is not limited to—applications, admissions, access to programs and services, employment, and advancement.

Such discrimination is prohibited by titles VI and VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, sections

503 and 504 of the Rehabilitation Act of 1973, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, 38 U.S.C. 4212 and requires affirmative action to employ and advance in employment disabled veterans, the Age Discrimination Act of 1975, the Pregnancy Act of 1978, the Age Discrimination in Employment Act Amendments of 1978, the Americans With Disabilities Act of 1990, the Civil Rights Act of 1991, the Rehabilitation Act Reauthorization of 1992, federal GINA Act of 2008, and other state and federal laws and regulations and university commitments.

Sexual harassment violates state and federal law and policies of the Board of Regents. It is prohibited (see FSH 3220 (<http://www.webpages.uidaho.edu/fsh/3220.html>)). The University of Idaho also prohibits discrimination on the basis of sexual orientation and gender identity/expression (see FSH 3215 (<http://www.webpages.uidaho.edu/fsh/3215.html>)). The entire *Faculty Staff Handbook* can be accessed online at <http://www.webpages.uidaho.edu/fsh/>.

Questions or concerns about the content and application of these laws, regulations, or University policy may be directed to the Director of the Office of Civil Rights and Investigations (208-885-4285); Director of the Center for Disability Access and Resources (208-885-6307); the Idaho Human Rights Commission (208-334-2873); Regional Office for Civil Rights, U.S. Department of Education in Seattle (206-220-7900); Equal Employment Opportunity Commission, Seattle District Office (206-220-6883); or Seattle Regional Office of Federal Contract Compliance Programs, U.S. Department of Labor (206-398-8000).

University of Idaho employees have a responsibility to report cases of discrimination and harassment (see FSH 3170 (<http://www.webpages.uidaho.edu/fsh/3170.html>)). Retaliation for bringing forward a complaint is prohibited (see FSH 3810 (<http://www.webpages.uidaho.edu/fsh/3810.html>)). All complaints will be investigated impartially and resolved promptly. Complaints about discrimination or harassment should be brought to the attention of the Director of the Office of Civil Rights & Investigations, Erin Agidius (Title IX and 504 Coordinator), at 875 Perimeter Dr., MS 3160, Moscow, ID 83844-3160 or through her telephone at 208-885-4285 or email ocri@uidaho.edu. For more information, visit <http://www.uidaho.edu/ocri> (<http://www.uidaho.edu/ocri/>).

Research

Research is a primary function of the University of Idaho, closely related to teaching for both students and faculty members, especially at the graduate level. Hence, most classroom teaching faculty members are also actively engaged in research.

Office of Research and Economic Development

The mission of the Office of Research and Economic Development is to provide academic and administrative leadership to:

1. foster, support, and inspire scholarly activity;
2. oversee ethical, managerial, and regulatory compliance of scholarly activities; and
3. ensure dissemination and application of scholarly activities. At the University of Idaho, scholarly and creative activity aspires to generate knowledge that strengthens the scientific, economic, cultural, social, and legal foundations of an open, diverse, and democratic society. Our goal is to achieve excellence in scholarship and creative activity

through an institutional culture that values and promotes strong academic areas and interdisciplinary collaboration among them.

The Office of Research and Economic Development focuses on promoting university-wide research and providing assistance in writing multidisciplinary proposals and obtaining research funds. This is accomplished by organizing and promoting research activities, providing information on grant opportunities from relevant groups to individuals and departments, and processing and recording all grant and contract proposals through the Office of Sponsored Programs to ensure that policies and procedures are recognized and followed. The Office strives to increase UI's research competitiveness by offering assistance to faculty, staff, and students.

The Research Council—the faculty's standing committee involved with the development and oversight of research policy—works closely with the vice president for research and economic development to resolve differences in interpretation and implementation of these policies. Additionally, the council acts as the peer review board in the university's internal competitive grant programs.

Research Units

Research activities are many and varied, and they are unique for each department and college. Certain administrative units provide an additional research function and emphasis that are, in many cases, related to the research program of the departments. Examples of these units are included below.

Aquaculture Research Institute

The Aquaculture Research Institute (ARI) in the University Research Office conducts, facilitates, supports, directs, and coordinates aquaculture and related fisheries research activities at the University of Idaho's Hagerman Fish Culture Experiment Station and throughout the state. Through the institute, UI scientists from various disciplines conduct research in both commercial and conservation aquaculture sciences and technologies such as fish culture and production efficiency, fish breeding and genetics, fish nutrition and physiology, fish diseases and pathology, fish waste management and water quality assessment, aquaculture marketing and economics, and recovery efforts for threatened and endangered fish species. The ARI does not offer degrees. Rather, the ARI assists academic departments in the training of graduate-level students by providing resources and opportunities for research.

Center for ETHICS¹

The Center for ETHICS¹ in the Department of Movement Sciences and College of Education believes in "teaching the tradition of competitive integrity to inspire leaders of character." The goal of the center is to improve moral development and character education through intervention, consultation, and leadership in advancing moral education.

1

Ethical Theory and Honor in Competition and Sport

Center for Ecohydraulics Research

The Center for Ecohydraulics Research (CER) is an internationally recognized and board-appointed organization dedicated to the study of critical water resource issues. Located in the Idaho Water Center in Boise, CER conducts research and graduate education and provides expertise related to preserving, restoring, and holistically managing river systems in a sustainable manner. CER conducts interdisciplinary research, both fundamental and applied, on water-related issues with findings disseminated to policy makers, academic peer groups, management

agencies, students, relevant business communities, and the public through journal articles, reports, workshops, tours, and presentations.

Center for Educational Research and Public Service

The Center for Educational Research and Public Service was established to conduct and support research and outreach; to facilitate research by College of Education, Health and Human Sciences faculty members and graduate students; and to be of assistance to local school districts and other educational institutions.

Center for Forest Nursery and Seedling Research

The Center for Forest Nursery and Seedling Research develops and demonstrates cost- and environmentally-effective processes for propagation, growth, and subsequent survival of forest seedlings. Processes are tested and demonstrated in a production scale nursery operation, with subsequent transfer of technology to the forest nursery industry of the region.

Center for Research on Invasive Species and Small Populations

The Center for Research on Invasive Species and Small Populations (CRISSP) combines advanced techniques in molecular biology with traditional approaches to biological and ecological management in order to maintain and enhance the integrity of our nation's native plant and animal populations. The goal of the center is to address challenges and inform policy on invasive species and small or threatened populations. This is accomplished by taking an integrated approach that coordinates resources and expertise for scientific research on these problems. The center's mission also incorporates public education and outreach on invasive species and conservation biology issues. The center contains state-of-the-art instrumentation for molecular biology and a dedicated computer laboratory to facilitate data acquisition and analysis. Stipends for graduate study and undergraduate internships are available through the center to students with an interest in invasive species and/or conservation biology issues.

Center for Secure and Dependable Systems

The Center for Secure and Dependable Systems (CSDS) operates in the College of Engineering. This board-approved center concentrates on computer-related security education and research. In 1999, the National Security Agency designated UI as one of the initial seven Centers of Excellence in Information Assurance Education, partly in recognition of CSDS's efforts in promoting information security education and research. This status has been regularly re-approved. The CSDS faculty conducts research in the areas of design and analysis of secure systems, including software vulnerability analysis, system defense, intrusion detection, critical infrastructure protection, secure protocols, network security, and computer forensics.

Electron Microscopy Center

This campus-wide facility includes scanning and transmission electron microscopes, energy-dispersive x-ray microanalysis, and x-ray diffraction and is available for use in teaching, research, and service. Located in McClure Hall, the facility is available to students and faculty members. Information concerning use of the Electron Microscopy Center is available from the facility or through the University Research Office.

Forest, Wildlife and Range Experiment Station

The Forest, Wildlife and Range Experiment Station is the research arm of the College of Natural Resources. Its staff includes all members of the college faculty, full-time research associates and technicians, and graduate students. The station staff conducts biophysical and social science research on a wide variety of natural resource management problems in the areas of forestry, forest products, rangelands, wildfire,

wildland recreation, wildlife, and fisheries. Because many of the graduate students enrolled in the college are on assistantships associated with station projects, the programs of the Experiment Station are closely connected with the college's graduate education mission.

Hagerman Fish Culture Experiment Station

The Hagerman Fish Culture Experiment Station is located in the heart of Idaho's aquaculture industry in the Magic Valley, and its focus is on rainbow trout. Most of Idaho's large commercial aquaculture operations are located nearby, and the close proximity of the research facility provides opportunities for industry partnerships in aquaculture research.

The Hagerman Station is a field laboratory of the Aquaculture Research Institute. UI scientists from various disciplines conduct research at the station in both commercial and conservation aquaculture sciences and technologies. The Hagerman Station has exceptional water resources supporting its wet laboratories and outdoor fish culture systems and leading edge analytical resources supporting functional genomics in association with nutrition, immune function, growth, reproduction, and marker-based breeding programs for rainbow trout. The Hagerman Station also hosts USDA Agriculture Research Service and Columbia River Inter-Tribal Fish Commission scientists who contribute to UI research, educational, and extension programs. Scientists at the station are deeply involved in recovery efforts for Idaho's endangered fish species and in assessment of threatened stocks and species. These efforts are often done in partnership with state and federal agencies and tribal entities.

Idaho's aquaculture extension faculty at the Hagerman Station work with other UI faculty and staff throughout the state to conduct a variety of outreach activities designed to educate the public and support and promote aquaculture and fisheries management/conservation.

Idaho Agricultural Experiment Station

The Idaho Agricultural Experiment Station is the research arm of the College of Agricultural and Life Sciences. Applied and fundamental research programs provide a technological base to assist the agricultural industries and rural development in the state and region. Graduate education at the M.S. and Ph.D. levels is an integral part of most research projects. Research Centers located in Aberdeen, Caldwell, Kimberly, Moscow, Parma, Sandpoint, Salmon/Carmen, Teton, and Twin Falls provide opportunities to conduct locally-relevant applied and basic research. Off-campus research centers represent a significant component of the college's and university's research capacity in terms of personnel, facilities, and experimental land resources. Over 40 of the college's research faculty and over 100 research support staff are stationed at these centers. Facilities have an experiment land resource exceeding 14,000 acres. Cooperative research programs involving a number of USDA Agricultural Research Service scientists and Federal laboratory facilities exist in Aberdeen, Dubois, Kimberly, and Moscow.

Idaho Cooperative Fish and Wildlife Research Unit

This cooperative program involving UI's College of Natural Resources, the U.S. Geological Survey, the U.S. Fish and Wildlife Service, and the Wildlife Management Institute in Washington, D.C. conducts research to find answers to a broad spectrum of questions relating to the management and viability of fish and wildlife resources. Issues addressed are of local, national, and international interest. Graduate students are trained at both the master's and doctoral levels. The unit provides in-service training for new and established conservation agency employees and provides technical and management assistance and information to public, federal, and state organizations.

Idaho Forest, Wildlife and Range Policy Analysis Group

The Policy Analysis Group is a research program of the Idaho Forest, Wildlife and Range Experiment Station in the College of Natural Resources. The Policy Analysis Group was created by the Idaho legislature to provide timely and objective analyses of natural resource issues of importance to the citizens of Idaho. Graduate students and staff are involved in specific short-term research to support policy analysis projects to assist the public and federal and state organizations.

Idaho Geological Survey

The Idaho Geological Survey (IGS) is a non-regulatory state agency that leads in the collection, interpretation, and dissemination of geologic and mineral data for Idaho. Formerly known as the Idaho Bureau of Mines and Geology, the agency has served the state since 1919. As a research unit of the University of Idaho, the IGS has offices on the Moscow and Boise campuses.

The Survey's mission is to provide the state with timely and relevant geologic information. The IGS fulfills this mission through applied geologic research and strong collaborations with federal and state agencies, academia, and the private sector. The IGS's research focuses on geologic mapping, geologic hazards, hydrogeology, geothermal energy, oil and gas, and metallic and industrial minerals. The Survey's Digital Mapping Laboratory produces new digital geologic maps, datasets, and publications, which are available to the public on the IGS website (idahogeology.org (<https://idahogeology.org/>)). The IGS is also engaged in the archiving and dissemination of historic mining records, community service, and earth science education.

Idaho NASA EPSCoR

The National Aeronautics and Space Administration's Established Program to Stimulate Competitive Research (NASA EPSCoR) for Idaho is based at the University of Idaho (U of I). Idaho NASA EPSCoR enhances the state's workforce in the science and technology fields by providing competitive awards for hands-on research experiences to students and faculty. The funding enables program development, coordination with NASA labs, and other efforts. More broadly, it improves Idaho's national research competitiveness and engages faculty and industry in research that benefits NASA and the state.

Idaho Space Grant Consortium

The National Space Grant College and Fellowship Program was founded in 1989. A network of 52 consortia expand opportunities for Americans to understand and participate in National Aeronautics and Space Administration (NASA) scientific endeavors by enhancing education, research, and public outreach efforts. The Idaho Space Grant Consortium (ISGC) has 24 affiliates who assist in our mission to provide opportunities for Idaho students who become the next generation of researchers, industry leaders, and entrepreneurs.

Idaho Water Resources Research Institute

The Idaho Water Resources Research Institute in the University Research Office was established at UI by the regents on October 24, 1963. This national institute program is administered by the United States Geological Survey of the U.S. Department of the Interior to stimulate, sponsor, coordinate, and supplement research, education, and outreach programs in the field of water resources. The institute serves the state by developing and coordinating water research programs intended to assure the state, region, and nation adequate supplies of high-quality water.

The area of water resources planning, development, and management is a composite of many disciplines. Consequently, the Idaho Water Resources Research Institute believes that professional needs in these

areas are best achieved by individuals with strong basic education in a traditional academic department enhanced by programs of study in water resources problems and professional practice. The university has developed procedures that encourage existing schools and departments to strengthen their programs in light of the special needs for water resources. The Idaho Water Resources Research Institute has coordinated masters and doctoral programs in several disciplines and specializations through various participating divisional programs.

The objectives of the institute are to:

1. promote water resources research and coordinate the efforts of the various university divisions and departments involved in water resources research;
2. strengthen and coordinate water-related undergraduate and graduate programs and course offerings so that the university can supply well-trained professionals and leaders;
3. develop, gather, and disseminate research findings within the state universities and to various federal, state, local, and civic organizations interested in water resources; and
4. promote water education for both the youth and adult community within Idaho.

Inland Empire Tree Improvement Cooperative

The Inland Empire Tree Improvement Cooperative in the College of Natural Resources includes the major commercial timber holding companies and public agencies in the Inland Northwest. The cooperative's main function is genetic improvement of dominant forest tree species in the Inland Northwest. Substantial research opportunities are available in the delineation of genetic patterns and prediction of genetic gains in tree species. Results have the potential for immediate application in operation programs.

Institute for Interdisciplinary Data Sciences (IIDS)

The Institute for Interdisciplinary Data Sciences (IIDS) is a research institute within the Office of Research and Economic Development (ORED) at the University of Idaho. The mission of IIDS is to empower researchers to fully harness the potential of the data revolution by provisioning and administering critical University research infrastructure related to genomics, bioinformatics, research computing, and data science. IIDS houses three service units including Research Computing and Data Services (RCDS), the Genomics and Bioinformatics Resources Core (GBRC), and the Initiative for Bioinformatics and Evolutionary Studies (IBEST) and is a vibrant home for interdisciplinary research for student, postdoc, and faculty participants. IIDS participants can access expertise and infrastructure, support for proposal development and grants management, and training and professional development activities.

Intermountain Forest Tree Nutrition Cooperative

The Intermountain Forest Tree Nutrition Cooperative in the College of Natural Resources includes the major state, federal, and private forest management organizations throughout the Inland Northwest. The cooperative's main function is the support of research dealing with the nutritional management of forests. Results of such research have the potential for application in forest management programs.

James A. and Louise McClure Center for Public Policy Research

Inspired by Senator McClure's legacy of statesmanship, bipartisan cooperation, and evidence-based decision making, the McClure Center addresses policy issues of importance at the local, state, regional, national, and global levels. The McClure Center champions a culture of collaboration, makes the case for evidence, and heightens public

discourse around informed policy making. Its reach beyond the University and the capital city is critical. The McClure Center values its role in educating students and connecting their scholarship to public policy in innovative ways, offering research opportunities in addition to student internships that emphasize applied learning.

The University of Idaho James A. and Louise McClure Center for Public Policy Research is Idaho's most trusted and preeminent public policy research center. The McClure Center is excited to offer research, policy, convening, and other services for businesses, non-profit organizations, governments, universities, colleges, and others inside and outside Idaho.

Laboratory Animal Research Facility

A centrally located facility for housing and maintaining small animals for use in teaching and research is available to faculty members and students. Information concerning space availability, use, and services provided is available through the facility itself.

Laboratory of Anthropology

The Alfred W. Bowers Laboratory of Anthropology serves as a research unit within the Department of Sociology and Anthropology in the College of Letters, Arts and Social Sciences. The three primary objectives are research, cultural resource management, and public outreach and education. Research facilities include the Pacific Northwest Anthropological Archives, the Asian American Comparative Collection, and the Crabtree Lithic Technology Collection. As the Archaeological Survey of Idaho Northern Repository, the Laboratory of Anthropology houses site forms and archaeological collections for the ten northern counties of Idaho. Public education projects include interactive presentations at area schools.

Martin Institute

The Martin Institute is an interdisciplinary teaching, outreach, and research center at the University of Idaho that considers the causes of war, the conditions for peace, and the international system. The Institute's strategic plan centers on providing transformational educational experiences for UI undergraduates, both within "traditional" global studies fields and across the curriculum, through administration of the undergraduate major in international studies and partnerships with the Honors Program. Funded research support on projects related to the Institute's mission is awarded annually to teams of undergraduate students and faculty selected to participate in the Martin Scholar program and to students in the Martin Academy. The Institute also publishes *The Journal of the Martin Institute | International Studies* annually, which focuses on excellent undergraduate research related to international problem solving.

National Institute for Advanced Transportation Technology

The mission of the National Institute for Advanced Transportation Technology (NIATT) is to develop engineering solutions (knowledge and technology) to transportation problems for the state of Idaho, the Pacific Northwest, and the United States and to prepare our students to be leaders in the design, deployment, and operation of our nation's complex transportation systems. NIATT is a center of excellence established by the US Department of Transportation to advance technology and expertise in the many disciplines comprising transportation through education, research, and technology transfer. NIATT operations covers three major research areas. The Clean Vehicle Technology research group focuses on research to protect the natural and built environment by improving the quality and economic viability of alternative fuels, reducing the environmental impacts of motorized vehicles, and improving the fuel economy and safety of motorized vehicles (including passenger cars, transit vehicles, and recreational vehicles). The Traffic Operations

and Control research team conducts research concerning traffic safety, traffic detection, control, surveillance, simulation, and optimization, and connected vehicle and autonomous vehicle operations with the goal of reducing energy consumption, reducing congestion, and improving safety. Erosion control, bridge construction, and pavement design, as well as planning methods, design practices, and software development, fall under the scope of researchers in the Transportation Infrastructure group. NIATT's diverse multidisciplinary research activities involves researchers across several departments and colleges. NIATT provides opportunities for graduate and undergraduate students to participate in research supported by the USDOT's University Transportation Centers program, the Idaho Transportation Department, the Federal Highway Administration, and others.

Northwest Irrigation and Soils Research Center

The Northwest Irrigation and Soils Research Center in Kimberly, Idaho has been developed as a cooperative facility between UI and the US Department of Agriculture. USDA scientists specialize in research to improve soil and water management practices to reduce the environmental footprint of irrigated agriculture in an arid environment while sustaining irrigated crop production. In addition, techniques are being developed for environmentally sound management practices for integrated dairy-irrigated crop production systems. Collaborative research projects between the USDA and UI specialists provide graduate students the opportunity to work closely with experts in both agencies and to utilize expanded facilities. USDA scientists hold affiliate faculty rank and may assist in directing student research projects and serve on graduate committees.

Rangeland Center

The Rangeland Center in the College of Natural Resources strives to create insight and foster understanding for the stewardship of public and private rangelands. The Rangeland Center is comprised of researchers and outreach specialists with expertise in disciplines that affect rangeland management and conservation including grazing, rangeland ecology, entomology, soil science, economics, rural sociology, fish and wildlife resources, invasive plants, forage production, animal science, wildland fire, restoration, and the use of spatial technologies to understand rangelands.

Reveley Geospatial Learning Center

The Reveley Geospatial Learning Center in the College of Natural Resources was formed to encourage, facilitate, and coordinate remote sensing and geographic information system (GIS) research at UI on an interdisciplinary basis. The unit maintains state-of-the-art computing hardware, software, and field equipment for project support. Research funding comes from a variety of sources including NASA, USFS, and commercial forest industries, among others. Most research projects utilize graduate students in both data acquisition and interpretation.

Rocky Mountain Cooperative Ecosystem Studies Unit

The Rocky Mountain Cooperative Ecosystem Studies Unit in the College of Natural Resources is a university-federal agency partnership involving the University of Idaho, University of Montana, Montana State University, Salish Kootenai College, Utah State University, Washington State University, and federal land management agencies. The mission of this unit is to improve the scientific base for managing ecosystems in the rapidly changing social, cultural, and environmental landscape of the Rocky Mountain Region. The unit provides research, technical assistance, and training programs for federal partners and provides support for faculty and graduate student ecosystem studies programs.

Statistics Consulting Center

The Statistics Consulting Center in the College of Science provides assistance in the design of experiments and sample surveys, advice on statistical analyses, and expertise on recent developments in statistical research. Proper statistical design and analysis play a key role in producing quality research within the university. The optimal time to seek statistical consulting is during the earliest stages of the research project, and certainly before any data collection stage. Faculty members and graduate students from any discipline are welcome. The center is located on the first floor of the IRIC Building and operates a free walk-in clinic. Faculty are also available by appointment.

Degrees Granted

On completion of specific courses of study and recommendation of the faculty, the degrees listed below are granted by the Regents of the University of Idaho.

Associate's Degrees

- Associate of Science, A.S.

Bachelor's Degrees

- Bachelor of Arts, B.A.
- Bachelor of Business Administration, B.B.A.
- Bachelor of Fine Arts, B.F.A.
- Bachelor of General Studies, B.G.S.
- Bachelor of Interior Architecture and Design, B.I.A.D.
- Bachelor of Music, B.Mus.
- Bachelor of Science, B.S.
- Bachelor of Science in
 - Agricultural and Life Sciences, B.S.Ag.L.S.
 - Agricultural Economics, B.S.Ag.Econ.
 - Agricultural Education, B.S.Ag.Ed.
 - Animal and Veterinary Science, B.S.A.V.S.
 - Architecture, B.S.Arch.
 - Biochemistry, B.S.Biochem.
 - Business, B.S.Bus.
 - Chemical Engineering, B.S.Ch.E.
 - Civil Engineering, B.S.C.E.
 - Computer Engineering, B.S.Comp.E.
 - Computer Science, B.S.C.S.
 - Dance, B.S.Dan.
 - Education, B.S.Ed.
 - Electrical Engineering, B.S.E.E.
 - Environmental Science, B.S.Env.S.
 - Fire Ecology and Management, B.S.Fire.Ecol.Mgmt.
 - Food Science, B.S.F.S.
 - Forestry, B.S.Forestry
 - Mechanical Engineering, B.S.M.E.
 - Microbiology, B.S.Microbiol.
 - Plant Science, B.S.Pl.Sc.
 - Recreation, B.S.Rec.
 - Soil and Water Systems, B.S.S.W.S.
 - Technology, B.S.Tech.

Master's Degrees

- Master of Accountancy, M.Acct.
- Master of Architecture, M.Arch.
- Master of Arts, M.A.
- Master of Arts in Teaching, M.A.T.
- Master of Business Administration, M.B.A.
- Master of Education, M.Ed.
- Master of Engineering, M.Engr.
- Master of Fine Arts, M.F.A.
- Master of Landscape Architecture, M.L.A.
- Master of Music, M.Mus.
- Master of Natural Resources, M.N.R.
- Master of Public Administration, M.P.A.
- Master of Science, M.S.
- Master of Science in Athletic Training, M.S.A.T.
- Professional Science Master, P.S.M.

Education Specialist Degrees

- Education Specialist, Ed.S.
- Education Specialist in Educational Leadership, Ed.S.Ed.Ldrshp.

Professional Degree in Law

- Juris Doctor, J.D.

Doctoral Degrees

- Doctor of Athletic Training, D.A.T.
- Doctor of Education, Ed.D.
- Doctor of Philosophy, Ph.D.

ACADEMIC OFFERINGS AT THE UNIVERSITY OF IDAHO

Programs offered by the university are shown in the list below. After a student has completed the requirements for a degree, the degree name and, if not already a part of the degree name, the major curriculum as shown in this list are printed on the student's diploma. Options listed under some curricula are areas of concentration within the major. Options, emphases, academic minors, and academic certificates are recorded only on the student's final transcript.

Program	Associate	Bachelor	Master	Education Specialist	Doctoral	Academic Minor	Academic Certificate	Offered Online
Accountancy (p. 174)			M.Acct.					
Accounting (p. 173)		B.S.Bus.				Minor		
Addictions (p. 337)						Minor		
Adult Organizational Learning and Leadership (p. 231)			M.S.					M.S.
Advertising (p. 376)		B.A. B.S.				Minor		
Aerospace Studies (p. 502)						Minor		
Africana Studies (p. 312)						Minor		
Aging Studies (p. 360)						Minor		
Agribusiness (p. 100)						Minor		
Agricultural Commodity Risk Management (p. 100)						Minor	Certificate	
Agricultural Communications and Leadership (p. 105)						Minor		
Agricultural Economics (p. 101)		B.S.Ag.Econ.						
Agricultural Education (p. 104)		B.S.Ag.Ed.	M.S.					
Agricultural Extension Education (p. 107)						Minor		
Agricultural Science, Communication and Leadership (p. 107)		B.S.Ag.L.S.						

Agricultural Systems Management (p. 130)	B.S.S.W.S.			Minor	
American Indian Studies (p. 360)				Minor	
Animal Physiology (p. 115)			Ph.D.		
Animal Science (p. 109)		M.S.		Minor	
Animal and Veterinary Science (p. 111)	B.S.A.V.S.				
Anthropology (p. 311)	B.A. B.S.	M.A.			Minor
Apparel, Textiles and Design (p. 137)	B.S.			Minor	
Applied Economics (p. 103)		M.S.			
Applied Finance (p. 181)					Certificate Certificate
Applied Music (p. 349)	B.A. B.S.				
Aquaculture (p. 400)				Minor	
Archaeological Technician (p. 315)					Certificate
Architecture (p. 158)	B.S.Arch.	M.Arch.		Minor	
Art (p. 161)	B.A.	M.F.A.		Minor	
Asian Studies (p. 370)				Minor	
Athletic Leadership (p. 233)					Certificate
Athletic Training (p. 232)		M.S.A.T.	D.A.T.		
Biochemistry (p. 448)	B.S.Biochem.			Minor	
Bioethics (p. 330)				Minor	
Bioinformatics and Computational Biology (p. 443)		M.S.	Ph.D.		Certificate
Biological Engineering (p. 248)	B.S.	M.Engr. M.S.	Ph.D.		

Biology (p. 448)	B.A. B.S.		Ph.D.	Minor	
Biotechnology and Plant Genomics (p. 123)	B.S.Pl.Sc.			Minor	
Broadcasting and Digital Media (p. 376)	B.A. B.S.			Minor	
Business (p. 185)				Minor	
Business Administration (p. 181)	B.B.A				B.B.A.
Business Analytics (p. 172)				Minor	Certificate
Business Economics (p. 182)	B.S.Bus				
Business Leadership (p. 185)					Certificate Certificate
Career and Technical Education (p. 206)	B.S.Ed.				
Chemical Engineering (p. 248)	B.S.Ch.E	M.Engr. M.S.	Ph.D.		
Chemistry (p. 460)	B.S.	M.S.	Ph.D.	Minor	
Child Development (p. 141)	B.S.				
Civil Engineering (p. 255)	B.S.C.E.	M.Engr. M.S.	Ph.D.		M.Engr.
Climate Change (p. 466)					Certificate
Climate Change and Solutions (p. 468)	B.S.				
Communication (p. 336)	B.A. B.S.			Minor	B.A. B.S.
Comparative/ International Politics (p. 331)				Minor	
Computer Engineering (p. 268)	B.S.Comp.E.	M.Engr. M.S.			M.Engr. M.S.
Computer Science (p. 260)	B.S.C.S.	M.S.	Ph.D.	Minor	M.S.

Conservation Biology (p. 400)	B.S.					
Corporate Social Responsibility (p. 363)					Certificate	Certificate
Creative Writing (p. 321)		M.F.A.		Minor		
Criminology (p. 316)	B.S.					B.S.
Critical Infrastructure Resilience (p. 286)					Certificate	
Crop Management (p. 126)				Minor		
Crop Science (p. 127)				Minor		
Crop Science and Management (p. 126)	B.S.PI.Sc.					
Culturally Responsive Pedagogy and Universal Design (p. 210)					Certificate	
Curriculum and Instruction (p. 205)		M.Ed.	Ed.S.			M.Ed. Ed.S.
Cybersecurity (p. 260)	B.S.	M.S.		Minor	Certificate	M.S.
Dance (p. 232)	B.S.Dan.			Minor		
Data Science (p. 484)					Certificate	
Dietetics (p. 142)		M.S.				
Dual Credit Instructor (p. 213)					Certificate	Certificate
Early Childhood Education (p. 137)	B.S.					
Earth and Spatial Sciences (p. 470)	B.S.					
Ecology (p. 418)				Minor		
Ecology and Ecosystem Science (p. 415)	B.S.					

Economics (p. 180)	B.A. B.S.			Minor	
Education (p. 202)			Ed.D. Ph.D.		
Educational Leadership (p. 231)		M.Ed.	Ed.S.Ed.Ldrshp.		M.Ed. Ed.S.Ed.Ldrshp.
Electrical Engineering (p. 268)	B.S.E.E.	M.Engr. M.S.	Ph.D.		M.Engr. M.S.
Elementary Education (p. 214)	B.S.Ed.				
Emergency Planning and Management (p. 287)					Certificate
Engineering Management (p. 287)		M.Engr.			M.Engr.
English (p. 321)	B.A. B.S.	M.A.		Minor	B.S.
Enterprise Systems Integration (p. 177)					Certificate Certificate
Entomology (p. 118)	B.S.Ag.L.S.	M.S.	Ph.D.	Minor	
Entrepreneurship (p. 180)				Minor	Certificate
Environmental Communication (p. 436)				Minor	
Environmental Design (p. 166)	B.S.E.D.				
Environmental Education and Science Communication (p. 437)					Certificate
Environmental Hydrogeology (p. 473)					Certificate
Environmental Science (p. 389)	B.S.Env.S.	M.S.	Ph.D.		
Environmental Soil Science (p. 132)	B.S.S.W.S.				
Equity and Justice (p. 317)					Certificate Certificate
Exercise, Sport and Health Sciences (p. 237)	B.S.				

Experimental Psychology (p. 339)				Ph.D.		
Family and Consumer Sciences (p. 137)	B.S.	M.S.				
Film and Television Production (p. 381)					Minor	
Film and Television (p. 381)	B.A. B.S.					
Finance (p. 188)	B.S.Bus.					
Fire Ecology and Management (p. 412)	B.S.Fire.Ecol.Mgmt.				Minor	
Fire Ecology, Management and Technology (p. 420)						Certificate Certificate
Fire Safety (p. 287)						Certificate
Fisheries Science (p. 399)	B.S.				Minor	
Food and Nutrition (p. 146)	B.S.					
Food Science (p. 109)	B.S.F.S.	M.S.		Ph.D.	Minor	
Forest and Sustainable Products (p. 421)	B.S.					
Forest Nursery Management and Technology (p. 422)	A.S.					
Forest Operations (p. 423)					Minor	
Forest Operations and Technology (p. 422)	A.S.					
Forest Resources (p. 423)					Minor	
Forestry (p. 424)	B.S.Forestry					
French (p. 368)	B.A.				Minor	

General Management (p. 190)		M.B.A.				
General Studies (p. 346)	A.A./A.S.	B.G.S.				B.G.S. A.A./A.S.
Geographic Information Systems (p. 466)	B.S.	M.S.				Certificate M.S. Certificate
Geography (p. 466)		M.S.	Ph.D.	Minor		M.S.
Geological Engineering (p. 259)		M.S.				M.S.
Geological and Mining Engineering (p. 260)				Minor		
Geology (p. 466)	B.S.	M.S.	Ph.D.	Minor		
German (p. 371)				Minor		
Global Disease Ecology (p. 121)	B.S.					
Groundwater Hydrology (p. 466)		M.S.		Minor		
History (p. 327)	B.A. B.S.	M.A.	Ph.D.	Minor		B.A. B.S.
Horticulture (p. 129)				Minor		
Horticulture and Urban Agriculture (p. 128)	B.S.PI.Sc.					
Human and Community Engagement (p. 147)				Minor		Minor
Human Development and Family Studies (p. 147)	B.S.					
Human Resource Development (p. 232)						Certificate
Human Safety Performance (p. 288)						Certificate
Industrial Technology (p. 288)	B.S.Tech.					

Integrated Architecture and Design (p. 161)		M.S.			
Interdisciplinary Science and Technology (p. 298)		P.S.M.			P.S.M.
Interdisciplinary Studies (Graduate Level) (p. 299)		M.A. M.S.			
Interdisciplinary Studies (Undergraduate Level) (p. 363)	B.A. B.S.				
Interior Architecture and Design (p. 165)	B.I.A.D.			Minor	
International Agriculture (p. 109)				Minor	
International Business (p. 190)				Minor	
International Studies (p. 368)	B.A.			Minor	
Jazz Studies (p. 351)				Minor	
Journalism (p. 376)	B.A. B.S.			Minor	
Landscape Architecture (p. 165)		M.L.A.		Minor	
Latin American Studies (p. 364)	B.A.				
Law (p. 304)			J.D.		
Management and Human Resources (p. 190)	B.S.Bus.				B.S.Bus.
Management Information Systems (p. 178)	B.S.Bus.				
Marketing (p. 180)	B.S.Bus.			Minor	B.S.Bus.
Mathematics (p. 483)	B.S.	M.A.T. M.S.	Ph.D.	Minor	M.A.T. Minor
Mechanical Engineering (p. 280)	B.S.M.E.	M.Engr. M.S.	Ph.D.	Minor	M.Engr.

Medical Education (WWAMI) (p. 501)		M.D. M.S.		Ph.D.
Medical Sciences (p. 455)	B.S.			
Microbiology (p. 448)	B.S. Microbiol.			Minor
Microbiology, Molecular Biology, and Biochemistry (p. 448)				Ph.D.
Military Science (p. 504)				Minor
Modern Language Business (p. 373)	B.A.			
Modern Language Study (p. 374)				Certificate
Molecular Biology and Biochemistry (p. 460)				Minor
Movement and Leisure Sciences (p. 243)		M.S.		
Music (p. 347)		M.A. M.Mus.		Minor M.Mus.
Music Education (p. 352)	B.Mus.			
Music: Business (p. 354)	B.Mus.			
Music: Composition (p. 355)	B.Mus.			
Music: Performance (p. 356)	B.Mus.			
Musical Theatre (p. 359)				Minor
Natural Resource Conservation (p. 437)				Minor
Natural Resource Economics (p. 104)				Minor

Natural Resources Enterprise Management (p. 438)	B.S.						
Natural Resource Management (p. 426)						Certificate	Certificate
Natural Resources (p. 430)		M.N.R. M.S.		Ph.D.	Minor		M.N.R.
Natural Resources and Environmental Law (p. 309)						Certificate	
Naval Science (p. 505)					Minor		
Neuroscience (p. 448)		M.S.		Ph.D.			
Nuclear Criticality Safety (p. 289)						Certificate	
Nuclear Decommissioning and Used Fuel Management (p. 290)						Certificate	Certificate
Nuclear Engineering (p. 285)		M.Engr. M.S.		Ph.D.			
Nuclear Safeguards and Security (p. 291)						Certificate	Certificate
Nuclear Technology Management (p. 291)						Certificate	Certificate
Nutrition (p. 149)					Minor		
Nutritional Sciences (p. 137)	B.S.	M.S.		Ph.D.	Minor		
Operations and Supply Chain Management (p. 199)	B.S.						B.S.
Organizational Dynamics (p. 365)						Certificate	
Organizational Sciences (p. 366)	B.S.						B.S.
Outdoor Recreation Leadership (p. 244)					Minor		

Philosophy (p. 330)	B.A. B.S.			Minor		
Philosophy, Politics and Economics (p. 333)				Minor		
Physical Education (p. 244)		M.Ed.				M.Ed.
Physics (p. 492)	B.A. B.S.	M.S.	Ph.D.	Minor		
Plant Pathology (p. 122)		M.S.				
Plant Protection (p. 123)				Minor		
Plant Science (p. 123)		M.S.	Ph.D.			
Political Science (p. 330)	B.A. B.S.	M.A.	Ph.D.	Minor		
Power System Protection and Relaying (p. 279)					Certificate	Certificate
Pre-Health Professions Studies (p. 498)				Minor		
Precision Agriculture (p. 133)					Certificate	Certificate
Professional Applications of Data Science (p. 447)					Certificate	Certificate
Professional Writing (p. 326)				Minor		
Promotions and Digital Marketing (p. 201)					Certificate	Certificate
Psychology (p. 336)	B.A. B.S.	M.S.		Minor		B.A. B.S. M.S.
Public Administration (p. 330)		M.P.A.				M.P.A.
Public Relations (p. 376)	B.A. B.S.			Minor		
Rangeland Ecology and Management (p. 412)	B.S.			Minor		

Recreation, Sport, and Tourism Management (p. 244)	B.S.Rec.			B.S.Rec.
Religious Studies (p. 368)			Minor	
Remote Sensing of the Environment (p. 435)				Certificate
Renewable Materials (p. 429)			Minor	
Restoration Ecology (p. 429)				Certificate
Robotic Engineering (p. 267)				Certificate
Robotics Systems (p. 267)				Certificate
Sales Management (p. 180)			Minor	Certificate Certificate
Secondary Education (p. 205)	B.S.Ed.	M.A.T.		
Secure and Dependable Computing Systems (p. 268)				Certificate Certificate
Small Business Management (https:// catalog.uidaho.e colleges- related-units/ business- economics/ business/ small-business- management- certificate/)				Certificate Certificate
Social Media Management (p. 386)				Certificate
Sociology (p. 311)	B.A. B.S.		Minor	Minor
Soil and Land Resources (p. 130)		M.S.	Ph.D.	
Soil Science (p. 134)			Minor	
Spanish (p. 368)	B.A.		Minor	Minor

Special Education (p. 217)		M.Ed.			M.Ed.
Statistical Science (p. 489)		M.S.			M.S.
Statistics (p. 483)	B.S.		Minor	Certificate	Certificate
Studio Art and Design (p. 163)	B.F.A.				
Sustainable Food Systems (p. 130)	B.S.Ag.L.S.		Minor		
Sustainable Tourism and Leisure Enterprises (p. 245)			Minor		
Teaching English as a Second Language (p. 326)			Minor		
Teaching English to Speakers of Other Languages (p. 218)		M.A.			
Technical Program Management (p. 179)				Certificate	Certificate
Technical Workforce Training (https://catalog.uidaho.edu/colleges-related-units/education-health-human-sciences/curriculum-instruction/technical-workforce-training-undergraduate-academic-certificate/)				Certificate	
Technology Integration Specialist (p. 230)				Certificate	Certificate
Technology Management (p. 292)		M.S.			M.S.

Technical Writing (p. 327)			Certificate	Certificate
Theatre Arts (p. 342)	B.A. B.F.A. B.S. M.F.A.			
Theatre Design and Technology (p. 346)			Minor	
Theatre Performance (p. 346)			Minor	
Trading and Capital Management (p. 201)			Certificate	
Tribal Natural Resources Stewardship (p. 407)			Certificate	
Virtual Technologies (p. 170)			Certificate	
Virtual Technology and Design (p. 170)	B.S.			
Vocal-Instrumental Music Education (p. 360)			Minor	
Water Resources (p. 151)		M.S.		Ph.D.
Water Science and Management (p. 130)	B.S.S.W.S.		Minor	
Wildland Fuel and Fire Technology (p. 429)	A.S.			
Wildlife Sciences (p. 399)	B.S.		Minor	
Women's, Gender and Sexuality Studies (p. 367)			Minor	

STUDENT SERVICES

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Academics and Advising

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Academic advising is one of the cornerstones to a successful student experience at the University of Idaho. Whether you are a faculty or staff member looking for guidance on how to advise your students or a student looking for academic advising on everything from choosing a major to career goals, our staff in academic advising can help. At the University of Idaho, academic advising is performed at the department or college level. Students are assigned an advisor by the college or department for the major(s) a student has declared.

Academic Advising Center

Vandal Success Center, Idaho Commons 306;
208-885-6300; advising@uidaho.edu.

The Advising Services program serves as a clearinghouse for academic advising information and is a point of contact where new and continuing students receive help in finding their way to the appropriate college and department advisors. Advising Services is also a center for delivery of development programs on academic advising for faculty and staff advisors. Advising Services staff can assist students considering a change of major and consult with advisors and students who have questions regarding general education requirements.

Center for Disability Access and Resources

Bruce M. Pitman Center 127;

208-885-6307; cdar@uidaho.edu; www.uidaho.edu/cdar (<https://www.uidaho.edu/current-students/cdar/>)

The University of Idaho has established services for students with disabilities in accordance with Section 504 of the Rehabilitation Act of 1973, as amended, and with the Americans with Disabilities Act (ADA) of 1990, as amended.

The Mission of the Center for Disability Access and Resources (CDAR) is to provide equal and integrated access to students with permanent or temporary disabilities. Students requesting accommodations or services must provide CDAR with appropriate disability documentation to support their request. In order to receive services in a timely manner, students are advised to make requests with adequate advance notice. Services include, but are not limited to deaf services, alternative text, notetaking, testing accommodations, assistive technology, transition management, housing accommodations, campus accessibility information, scholarship opportunities, advocacy, and assistance with learning as it relates to disabilities.

Students are asked to contact CDAR as soon as possible to discuss specific disability-related concerns and needs. This voluntary self-identification enables CDAR to determine appropriate and reasonable accommodations to ensure classes, programs, services and activities at the University of Idaho are accessible. Information regarding disabilities will be kept in strict confidence and has no effect on admission to the University. Federal law prohibits the Admissions Office from making preadmissions inquiries about disabilities.

Counseling and Testing Center

Continuing Education Building, 3rd Floor;

208-885-6716; www.ctc.uidaho.edu (<https://www.ctc.uidaho.edu/>)

Many students find that it is helpful to discuss their concerns with a professional who takes the time to listen and understand. Counselors at the Counseling & Testing Center (CTC) are available to meet with students to discuss personal, educational, or career concerns. Counseling can help students learn more about themselves and develop new skills to deal more effectively with personal problems such as depression, anxiety, stress, eating disorders, sexual abuse, relationships, academic pressures, and problems with alcohol or other substances. Counseling sessions are confidential. The CTC offers the following services: crisis intervention, individual counseling, group counseling, couples counseling, stress management, biofeedback training, educational presentations, referral, testing, and assessment of learning disabilities. For students who wish to research issues on their own or in conjunction with a counselor, the CTC has a self-help room with information to assist students with solutions to problems such as test anxiety, panic, depression, homesickness, relationship concerns, and a variety of other issues common to college students.

The CTC also offers the following career development and counseling services to help students select a major and a career direction that is right for them:

1. individual counseling for major and career decision making,
2. career interest testing and interpretation, and
3. computerized career exploration system (DISCOVER[®]).

The CTC offers a variety of testing and assessment services. These include placement tests such as COMPASS which is used to determine initial placement in math and English courses, and advanced placement exams such as CLEP which allow students to earn college credit by passing exams in a variety of subject areas. The CTC also administers many of the national testing programs such as the SAT, ACT, GRE, TOEFL, MELAB, MCAT and PRAXIS and provides a secure testing environment for students who need exams proctored. Assessment services include evaluations for learning disabilities and Attention Deficit/Hyperactivity Disorder. In addition, psychological, diagnostic and career assessments are often used in the context of counseling and are available at the CTC. A fee is charged for most testing and assessment services. For more detailed information go to www.uidaho.edu/CTC/testing (<http://www.uidaho.edu/CTC/testing/>).

Counseling services are available without charge to full-time students. A fee is charged for most assessment and proctoring services. The CTC is committed to offering services that are inclusive and respectful of all students, regardless of race and/or ethnicity, sex, color, religion, spirituality, creed, national origin or ancestry, age, marital status, sexual orientation, gender identity, gender expression, disability, or veteran status. For additional information on services provided by the Counseling & Testing Center, visit the web at www.ctc.uidaho.edu (<http://www.ctc.uidaho.edu/>).

National Student Exchange

National Student Exchange (NSE) gives University of Idaho students the opportunity to attend one of 175 colleges or universities throughout the United States for one or two semesters. UI students pay UI fees or the resident fees of their host campus. Students normally need to apply by February for the next academic year. Credits earned on NSE fulfill University of Idaho residence-credit requirements.

To qualify for participation in the NSE, a student should:

1. be a full-time University of Idaho student;
2. be a sophomore, junior, or senior at the time of exchange; and
3. have a UI grade-point average of 2.5 at the time the application is filed.

Information and applications may be obtained from the International Programs Office, LLC Building #3, Ground Floor (208-885-0858).

Polya Mathematics Center

Brink/Phinney Hall, 1st floor;
208/885-5717; polya@uidaho.edu; www.uidaho.edu/sci/math/polya/
<https://www.uidaho.edu/sci/math/polya/approach/>

The Polya Mathematics Center is a resource for students who take MATH 108, MATH 143, and MATH 144. Polya is located on the ground floor of Brink/Phinney Hall. The computer lab offers students mathematical software and courseware and is staffed over 70 hours each week by tutors and instructors. The students in MATH 108 and MATH 143 attend one focus group each week where they are guided by an instructor who provides the necessary structure and direction. Additional lectures are delivered at computers by streaming video so that students can view them at their leisure.

The pre-calculus courses MATH 108 and MATH 143 are taught entirely in Polya. The students in these courses attend one focus group each week where they are guided by an instructor who provides the necessary structure and direction. Lectures are delivered at computers by streaming video so that students can view them at their convenience and review them as needed. Those who prefer a live lecture can attend the lecture series offered nine times a week. Students do homework exercises on the computer. The computer-mediated exercises offer assistance and immediate detection of errors. The flexible organization of these courses offers students the option of working at a faster pace than required in order to complete the courses in less than a semester.

The Polya Math Center staff also offers drop-in assistance for students in MATH 160, MATH 170, and MATH 175 in the Calculus Learning Center from 3 pm - 9 pm Mondays through Thursdays and 1 pm - 5 pm Fridays and Saturdays.

Pre-Health Professions Advising

pre-health@uidaho.edu; **208-885-5809**

The Pre-Health Professions Advising Program at the University of Idaho serves as a resource for current students and alumni from all majors who are interested in a health professions career.

"Pre-Health" is not a specific major or academic track: it is a personal and professional development path that students pursue alongside completion of their degree requirements. Pre-health advisors assist students with prerequisite course sequencing, advice for building necessary clinical and shadowing experience, preparing to take professional school entrance exams, and guidance with the application and interview process.

Students can connect with our program by signing up for the Pre-Health Advising Contact List (this process also adds a specific pre-health cohort code to your Degree Audit, such as "pre-med" or "pre-PT"), requesting an individual advising appointment, attending workshops, and following us on Facebook.

Raven Scholars Program

Idaho Student Union 330, <https://www.uidaho.edu/current-students/cdar/raven-scholars> (<https://www.uidaho.edu/current-students/cdar/raven-scholars/>); ravenscholars@uidaho.edu; **208-885-9107**

The Raven Scholars Program supports college success for students who are on the Autism Spectrum by providing peer mentoring, coordination of campus services, and opportunities to improve academic and life skills.

Statistics Assistance Center

Second Floor of the University Library in the tutoring area; www.uidaho.edu/sci/stat/about/sac (<https://www.uidaho.edu/sci/stat/about/sac/>)

The Statistics Assistance Center (SAC) was developed to give assistance to students taking lower level statistics courses. Statistics graduate students in the SAC provide help for students enrolled in STAT 251 (<https://uidaho-preview.courseleaf.com/search/?P=STAT%20251>), STAT 301 (<https://uidaho-preview.courseleaf.com/search/?P=STAT%20301>), and STAT 431 (<https://uidaho-preview.courseleaf.com/search/?P=STAT%20431>). The staff works to provide a friendly, non-threatening environment where students will feel comfortable to work, ask questions, and learn statistics outside of class.

The SAC is generally open for statistics tutoring Monday through Friday. Statistics tutoring hours vary each semester, so please check with the Department of Statistical Science Office (Brink 415A; 208-885-2929) for scheduled times or see the statistics web page (www.uidaho.edu/sci/stat/about/sac (<https://www.uidaho.edu/sci/stat/about/sac/>)). Students can visit the SAC on a drop-in basis during scheduled times for help with homework problems. There is a Student Computing Lab that has a number of computers that provide supporting software for statistics courses at the Library.

Located on the third floor of the ISUB, the Writing Center offers peer tutoring assistance to all UI students. Writing Center tutors assist students with writing for any class or subject and at all stages of the writing process. The Writing Center is open Monday through Friday through face-to-face or online tutoring sessions during the fall and spring semesters. Students can check availability and schedule appointments through the website. Students can also telephone, email, or visit the website for further information.

Student Support Services - a TRIO program

ssstrio@uidaho.edu

Student Support Services (SSS), an academic support program, assists 232 participating students each year to

1. identify and pursue their educational goals;
2. establish, maintain, or improve their academic performance; and
3. work through the challenges of university life.

The SSS-Trio program offers participants individualized tutoring in most subject areas, educational planning and goal setting, academic advising, and focused learning and study skill development. SSS also provides personal support. This support is particularly helpful for students with specific needs (e.g., delayed entry or re-entry, nontraditional preparation, disabilities which impact learning, academic probation and reinstatement, or provisional admission).

To be eligible for services, a student must be either a U.S. citizen or permanent legal resident, must have a need for academic services, and must be

1. low income (according to federal guidelines) OR
2. from a first generation family (neither parent/guardian has earned a baccalaureate degree) OR
3. have a documented disability which impacts learning.

SSS Merit Scholarships (between \$890-\$1,000) will be awarded spring semester to each active program participant with freshman or sophomore standing who is a PELL Grant recipient with financial need and who makes satisfactory academic progress fall semester. Students are accepted into the program on a first-come, first-served basis and are encouraged to contact the office as early in the semester as possible.

Tutoring and College Success

tcs@uidaho.edu

Tutoring and College Success (TCS) supports all undergraduate students in their educational goals through Drop-In Tutoring (tutoring for most subjects with no appointment), Supplemental Instruction (SI-PASS, Peer Assisted Study Sessions for difficult courses), and Academic Coaching (success consultations, workshops and presentations, and for-credit success strategies course).

Writing Center

Idaho Student Union Building (ISUB) 323; 208-855-6644;
writingcenter@uidaho.edu; www.uidaho.edu/class/writingcenter (<https://www.uidaho.edu/class/english/writingcenter/>)

Admission to the University

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- Dual Credit and Non-degree (p. 43)
- International Admission (p. 44)
- Transfer Credit Evaluation (p. 45)
- General Education Requirements for Transfer Students (p. 47)
- Graduate Admission (p. 47)
- Graduate Admission Categories (p. 49)
- Additional Information for International Students (p. 50)

Information about the undergraduate admission process and application forms are available from the Office of Admissions or online at www.uidaho.edu/admissions (<http://www.uidaho.edu/admissions/>). Applicants for admission to the university must present satisfactory evidence of good character.

Application Procedures

All applicants for admission are required to submit the following:

1. The appropriate, completed application form (i.e., undergraduate, non-degree, or international). Failure to list all institutions attended or submission of inaccurate transcripts or other supporting documents as specified on the application form is considered fraud and subjects the applicant to immediate cancellation of their registration and/or dismissal from the university.
2. Official transcripts from the last high school and all colleges or universities attended. (See sections on first-year, transfer, non-degree, or international admission requirements for further details.) **Transcripts submitted in support of an application must be official and must be sent directly to the Office of Admissions by the issuing institution. Transcripts received become the property of the university and cannot be returned, copied, or forwarded.** Official transcripts must be signed by the registrar, superintendent, principal, or other authorized official of the school.
3. Applicants who are still in high school should apply during their senior year and should ask their high school counselor to send a copy of their current transcript and ACT or SAT scores to the Office of Admissions. If qualified, the applicant will be given an early notice of acceptance based on this record. Final acceptance will be granted when the university receives a final transcript mailed directly from the high school verifying that the applicant has graduated from a regionally accredited high school and has satisfied all admission requirements.
4. Scores from the College Board (SAT) or the American College Testing Program (ACT) if applying for admission to the freshman class and if available. This includes transfer applicants with fewer than 14 transferable semester credits. International applicants are not required to submit ACT or SAT scores.
5. A non-refundable application fee of \$60 for domestic applicants and \$30 for applicants seeking re-admission. This fee is not charged to students applying for non-

degree admission or domestic applicants who are Idaho residents.

Application Priority Dates. To provide time for evaluation and for notice of acceptance to reach the applicant, applications and credentials should be submitted to the Office of Admissions at least three weeks prior to the beginning of classes. International applicants have different priority dates (see "International Admission Requirements (p. 44)").

Notification of Admission. When all of an applicant's credentials have been received and they have been found eligible, a letter of acceptance will be sent. Acceptance is granted for a specified semester or summer session. If an applicant does not register for the term for which they applied and were accepted, it will be necessary to file a new application if entrance at a later time is desired.

First-Year Admission Requirements

First-year applicants graduating from high school prior to 1995 must meet the requirements in effect for their graduation year. A degree-seeking applicant applying directly from high school or with fewer than 14 semester credits of transferable college work earned after high school graduation must:

1. Submit ACT or SAT test scores. New first-year students who do not provide test scores will automatically be considered for admission if their cumulative unweighted GPA is 2.60–4.00. Those who have cumulative GPAs of 2.30–2.59 who do not have test scores will be admitted through the Vandal Gateway Program (<https://www.uidaho.edu/class/academics/undergraduate/gateway/>). Students in this GPA range are also welcome to appeal through our Admissions Committee (<https://www.uidaho.edu/admissions/apply/first-year/admission-requirements/admissions-committee/>). **Every student who has a test score is encouraged to provide it for admission as well as class placement.**
2. Graduate from a regionally accredited high school with a combination of cumulative GPA¹ and test scores² as defined in the following table:

High School GPA	ACT Composite	SAT Evidence-Based Reading & Writing + Math (SAT taken March 2016 and after)	SAT Critical Reading + Math (SAT taken prior to March 2016)
3.00 - 4.00	Any test score	Any test score	Any test score
2.60 - 2.99	Any test score	Any test score	Any test score
2.50 - 2.59	17 - 36	910-1600	830-1600
2.40 - 2.49	19 - 36	990-1600	910-1600
2.30 - 2.39	21 - 36	1070-1600	990-1600
2.20 - 2.29	23 - 36	1140-1600	1070-1600

¹

Unweighted

2

Written sections of the test not required for admission.

3. Complete specified high school courses with a minimum 2.00 GPA as listed below. A credit is defined as a course taken with a minimum of 70 hours of classroom instruction. A high school credit can be counted in only one category.
 - a. **English:** A minimum of 8 credits (4 years), selected from composition and literature courses or courses that integrate composition, language, and literature.
 - b. **Mathematics:** A minimum of 6 credits (3 years) including algebra I or applied math I, geometry or applied math II, and algebra II. An additional 2 credits are strongly recommended. Other courses may include probability, discrete math, analytic geometry, calculus, statistics, and trigonometry. **Four of the required mathematics credits must be taken in the 10th, 11th, and 12th grades.**
 - c. **Social Science:** A minimum of 5 credits (2 ½ years), selected from American government (state and local), geography, U.S. history, world history, psychology, sociology, and economics (consumer economics courses approved by the Idaho State Board of Education may be counted toward this requirement).
 - d. **Natural Science:** A minimum of 6 credits (3 years), selected from anatomy, biology, chemistry, geology, earth science, physical science, physiology, physics, zoology, and applied science courses jointly approved by the State Department of Education (SDOE) and the State Department of Professional-Technical Education (SDPTE) (maximum of two credits in this category). Ecology will count if SDOE approved. At least two credits must involve laboratory science experience. Note: A laboratory science course is defined as one in which at least one class period each week is devoted to providing students the opportunity to manipulate equipment, materials, or specimens; develop skills in observation and analysis; and discover, demonstrate, illustrate, or test scientific principles or concepts.
 - e. **Humanities/Foreign Language:** A minimum of 2 credits (1 year), selected from literature, history, philosophy, foreign language, fine arts, and interdisciplinary humanities (related study of two or more of the traditional humanities disciplines). These courses should emphasize history, appreciation, theory, analysis, and/or critique. History courses beyond those required for state high school graduation may be counted. Foreign language study is strongly recommended. Native American language (five Idaho tribes) may meet this requirement if taught by certified high school faculty.
 - f. **Other College Preparation:** A minimum of 3 credits (1 ½ years), of which no more than one credit may be in speech or debate (debate must be taught by a certified teacher). Other courses may include studio/performing arts (art, dance, drama, and music) or foreign language (beyond any foreign language credit applied in the humanities/foreign language category). May include no more than two credits in SDPTE-approved classes in agricultural science and

technology; business and office education; health occupations education; family and consumer sciences education; occupational family and consumer science education; trade, industrial, and technical education; and individualized occupational training. Applicants with fewer than 14 semester hours of transfer credit completed after high school graduation must meet both first-year and transfer admission requirements, including submission of the required test scores. (See "First-Year Admission Requirements" above.)

Students who have participated in running start, dual credit, or accelerated learning programs who concurrently enroll in college credit courses while still in high school need to meet first-year requirements for admission and submit all the appropriate high school documentation regardless of the number of transferable credits completed. (See "First-Year Admission Requirements" above.)

A first-year applicant may apply to the Admissions Committee for consideration (see "Applying to the Admissions Committee" below) if they do not qualify for regular admission or satisfy one of the criteria below:

1. Graduates from a non-accredited high school,
2. Is home schooled,
3. Obtains a General Educational Development (GED) certificate,
4. Deserves consideration because of special circumstances (i.e. disadvantaged or minority status, delayed entry, returning veteran, a talented student wishing to enter college early, and/or similar situations).

Transfer Admission Requirements

Applicants who have been enrolled in other colleges or universities accredited by one of the approved accrediting agencies listed below, such as the Northwest Commission on Colleges and Universities, and who have satisfactorily accumulated 14 or more transferable credits after high school graduation may be admitted with advance standing as transfer students.

In addition to a completed undergraduate admission application form, transfer applicants must submit the following credentials to the Undergraduate Admissions Office:

1. Official transcripts from each college or university previously attended. To be considered official, transcripts must be sent via an approved electronic transcript service or mailed directly to the University of Idaho Undergraduate Admissions Office by the issuing institution. **Transcripts received become the property of the university and cannot be returned, copied, or forwarded.**
2. Applicants with fewer than 14 semester hours of transfer credit since high school graduation must meet both first-year and transfer admission requirements, including submission of the required test scores. (See "First-Year Admission Requirements" above.)
3. Students participating in running start, dual credit, or accelerated learning programs who are concurrently enrolled in college credit courses while still attending high school need to meet first-year requirements for admission and submit all the appropriate high school documentation regardless of the number of transferable credits

completed. (See "First-Year Admission Requirements" above.)

Transfer students are selected from those applicants who present a cumulative grade-point average of at least 2.00 (C) for all college-level study attempted in all accredited colleges attended, exclusive of courses for which credits are not allowed. Students transferring from out-of-state schools into the College of Engineering must have a cumulative grade-point average of at least 2.80. Admission of transfer students to the landscape architecture program will be based on GPA (typically limited to 2.5 or above), test scores (ACT/SAT), and a portfolio with a letter of intent submitted to the department.

Students admitted to the University of Idaho from other collegiate educational institutions must have complied with the academic regulations for continuance in the institution(s) that they have attended in addition to the academic regulations that are applied to students enrolled in this institution.

An applicant with previous college work who does not qualify for regular admission may also seek provisional acceptance by applying to the Admissions Committee for consideration (see "Applying to the Admissions Committee" below).

Approved Accreditation Associations

The University of Idaho relies on the following accrediting associations standards to evaluate and accept college-level credits and all grades earned by transfer students:

- Accrediting Commission for Community and Junior Colleges (ACCJC) Western Association of Schools and Colleges (<http://www.accjc.org/>)
- Higher Learning Commission (HLC) (<http://www.hlcommission.org/>)
- Middle States Association of Colleges and Schools (MSCHE) (<http://www.msche.org/>)
- New England Association of Schools and Colleges (NECHE) (<https://www.neche.org/>)
- Northwest Commission on Colleges and Universities (NWCCU) (<http://www.nwccu.org/>)
- Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) (<http://www.sacscoc.org/>)
- WASC Senior College and University Commission (WSCUC) (<http://www.wscuc.org/>)

Readmission Requirements

Students returning after two years from last attendance must complete an Application for Readmission and submit a \$30 application fee and official transcripts from all colleges or universities attended since last enrolling at U of I. (Also see regulation B-1. (p. 72)) Application forms are available online at www.uidaho.edu/admissions (<http://www.uidaho.edu/admissions/>).

Returning students who were not in good academic standing when they left the university need to submit the above materials and follow the appropriate reinstatement procedures as stated in regulation L-4 (p. 92). Contact the Admissions Office for more information (208-885-6326, admissions@uidaho.edu).

Applying to the Admissions Committee

Applicants who do not qualify for admission to the University of Idaho may petition the Admissions Committee. Such applicants must submit to the Undergraduate Admissions Office an application for admission, the appropriate fee, all required official transcripts and test scores, three signed letters of recommendation, and a written statement from the student that includes the student's goals, educational and/or professional objectives, an explanation of past academic performance, information and/or documentation regarding any extenuating circumstances, and any other information the student wishes to have considered. This information should be received in the Undergraduate Admissions Office by August 1 for fall semester and December 1 for spring semester.

Students admitted through the Admissions Committee may be granted regular or provisional admission and will be subject to the regulations on academic probation, disqualification, and reinstatement (see regulation L (p. 92)). The Admissions Committee may assign provisionally admitted students a primary advisor. These students, while on provisional status, will need this advisor's approval before registering and when making any changes to their registration. They may be required to attend pre-academic planning within an office or a program of the University.

Freshmen admitted provisionally may change to regular admission status upon satisfactory completion of 14 credits, 12 of which must be in four different categories of the general education requirements (see regulation J-3 (p. 78)). Regular admission status must be attained within three semesters or the student will be dismissed, subject to the Admissions Committee's appeal procedures.

Transfer students admitted provisionally must enroll on probation, meet all conditions imposed by the committee, and complete the first semester with at least a 2.00 grade-point average, or they will be dismissed, subject to the Admissions Committee's appeal procedure.

Dual Credit

Dual credit is a program authorized by the Idaho State Legislature that provides qualified high school students with an opportunity to receive both high school and university credit for classes taken at the University of Idaho. High school students are eligible if they are at least 16 years old before the first day of class in any semester OR they have completed at least half the high school graduation requirements (generally high school juniors and seniors).

To apply for the dual credit program, students must submit the online application for Dual Credit admission and complete the U of I "Dual Credit Registration for High School" form, available from the Office of Dual Credit (208-885-6237) or online at <http://dualcredit.uidaho.edu/students/>. The completed registration form must be signed by the student's parent/guardian and high school principal or counselor. Students under age 16 must also obtain permission from the course instructor. Written notice of acceptance to the dual credit program and confirmation of registration will be provided to the student. Dual credit students are not eligible for federal or state financial aid programs.

Non-degree Admission Requirements

This category is for applicants who wish to enroll in courses pertaining to their personal interest and who do not want to work toward a formal degree at the University of Idaho. Application forms are available online at www.uidaho.edu/admissions (<http://www.uidaho.edu/admissions/>).

A person admitted as a non-degree student who wants to take undergraduate courses must:

1. be a high school graduate or have completed the GED;
2. understand that acceptance in this category does not constitute acceptance to a degree-granting program;
3. have sufficient educational background to qualify for the course or courses in which enrollment is sought;
4. accept personal responsibility for the applicability of credits earned while registered in this category; and
5. understand that students in this non-degree category cannot be considered for federal or state financial aid.

A student who has not yet graduated from high school or obtained a GED may be admitted as a non-degree student based on the dual credit policies of the University of Idaho (see Dual Credit).

A person admitted as a non-degree student who wants to take graduate-level courses must have an undergraduate degree from an accredited institution with a GPA of 3.00 or higher. Strict limitations exist for use of non-degree credits toward a graduate degree. Please refer to the College of Graduate Studies (p. 292) section.

Applicants whose native language is not English must provide proof of English proficiency.

A non-degree student may register for no more than 7 credits each semester and may complete a maximum of 32 semester credits. Students on official UI exchange programs and those in the dual credit program are not limited to 7 credits each semester. International exchange students must take 12 or more credits. Upon completion of 32 semester credits, the student must either be admitted as a degree-seeking student at the University of Idaho or submit a letter of appeal to continue as a non-degree student. Permission of the instructor is required to enroll in courses numbered 500-600. Permission of the dean of the College of Law is required to enroll in courses numbered 800-999.

A non-degree student seeking admission as an undergraduate student or as a graduate student will remain classified as a non-degree student and will not be admitted to a program until all admission requirements have been met. Total credits and the U of I GPA will be considered when applying for admission. Credit earned as a non-degree student will be moved to the undergraduate transcript upon admission as an undergraduate student unless the student specifically requests in writing to the Registrar's Office that all credits earned remain on the non-degree transcript.

Any deviations to the admission policy or credit limits will be acted on by the Director of Admissions and/or the Admissions Committee if the student wishes to enroll for undergraduate credit. Any deviations to the admission policy or credit limits will be acted on by the associate dean of the College of Graduate Studies and director of graduate admissions and/or the Graduate Petitions Committee if the student wishes to enroll for graduate credit.

International Admission Requirements

The University of Idaho encourages the application of qualified students from other nations to join its student community. Admission is dependent upon credentials which demonstrate a capacity to succeed academically at the university level. Application forms are available online at www.uidaho.edu/admissions (<http://www.uidaho.edu/admissions/>).

In some instances, individual departmental requirements may be more rigorous than the general U of I admission requirements. In those situations, final admission is based on the department's decision.

All international students who hold nonresident alien visas and who are pursuing a degree (i.e., matriculated) must hold a valid visa status which allows them to study full-time. Some of these visa categories include but are not limited to F-1, J-1, or H-4. The immigration status of international students must comply with the Department of Homeland Security (DHS) regulations. Individuals holding a U.S. tourist visa (VWP, B1, B2) cannot engage in a course of study in the U.S.

Priority dates for international applicants are as follows:

Deadline	Application
May 1	Fall semester application
October 1	Spring semester application
March 1	Summer term application
Application Fee	\$70.00 (non-refundable)

International student applicants must submit the following:

1. Official transcripts or certified copies of certificate(s), diploma(s), or government examination report(s) received from any educational institution (high school, college, or university). These documents must be translated into English and must be sent by the certifying agency directly to the Undergraduate Admissions Office. Please note: If you are applying after the above priority dates, a professional credential evaluation of your academic transcript(s) may be required. Please contact the Admissions Office or visit our website at www.uidaho.edu/admissions (<http://www.uidaho.edu/admissions/>) for a list of approved credential evaluation agencies.
2. Proof of English language proficiency. UI requires all applicants whose primary language is not English to demonstrate proficiency in the English language. Because most applicants report the test of English as a Foreign Language (TOEFL) score, UI bases its minimum English language proficiency requirements on the TOEFL. UI requires a minimum TOEFL score of 70. Equivalent measures of proficiency acceptable to UI include SAT evidence-based reading and writing with a minimum score of 550; Cambridge International English Language Testing System (IELTS) with a minimum score of 6.0; Cambridge Certificate in Advanced English (CAE) with a pass; Cambridge Certificate of Proficiency in English (CPE) with a pass; Cambridge International "O" Levels with a pass; or Pearson (PTE) Academic with a minimum score of 48. Exceptions to the minimum TOEFL requirement are made for:
 - a. those from official English-speaking countries;
 - b. those who have earned a degree from either a U.S. institution or an institution in another official English-speaking country;
 - c. those who successfully complete the American Language and Culture Program at the University of Idaho; or
 - d. based on the judgment of the Undergraduate Admissions Office, those who have successfully completed English courses at U.S. institutions. If

required, the TOEFL score or an approved equivalent must be on file before the application for admission will be processed.

3. A completed "Certificate of Financial Responsibility" and all required supporting documentation as required by the Department of Homeland Security (DHS). International students must present to the Undergraduate Admissions Office satisfactory statements of finances and adequate proof of financial responsibility or sponsorship for all financial obligations while attending the university.
4. If the student is transferring to the University of Idaho from another U.S. college or university, the student must request that their SEVIS record be transferred to the University of Idaho before an I-20 or DS-2019 can be issued.

Undergraduate applicants who have had no previous work at the post-secondary level must have at least a 2.50 grade-point average (on a 4.0 scale) from secondary school and must also meet the criteria for being admitted to a university level institution in the applicant's home country in order to be considered for admission to the University of Idaho.

Undergraduate applicants who have attended a post-secondary-level institution must have completed at least 14 transferable semester credits at an accredited/recognized institution and must present a minimum grade-point average of 2.00 for all post-secondary work attempted. For admission into the College of Engineering, transfer students must have a cumulative grade-point average of at least 2.80.

Other departments have additional requirements.

Students who have completed fewer than 14 transferable semester credits (post-secondary) must meet the secondary school GPA requirements in addition to the post-secondary transfer requirements.

Applicants who do not meet the minimum university admission requirements may apply to the Admissions Committee. Those applicants must submit an application for admission, all required official transcripts and official translations, test scores, three signed letters of recommendation, and a signed written statement of their educational objectives. All materials supporting the applicant's appeal must be submitted in English. This information should be received in the Undergraduate Admissions Office by **May 1** in order to be considered for the fall semester and **October 1** for the spring semester.

International Application Priority Dates

To provide time for evaluation, for notice of admission status to reach the applicant, and for DHS requirements to be met for issuance of a student visa, applications and credentials should be received by the Undergraduate Admissions Office no later than the following dates: May 1 for the fall semester, October 1 for the spring semester, and March 1 for the summer session. Please note: If you are applying after the above deadlines, a professional credential evaluation of your academic transcript(s) may be required. Please contact the admissions office or visit our website at www.uidaho.edu/admissions (<http://www.uidaho.edu/admissions/>) for a list of approved credential evaluation agencies.

International Student Concurrent Enrollment

Students enrolled in the Advanced Level of ALCP may, in consultation with the coordinator of ALCP (to determine appropriate courses) and the course instructor, obtain approval to enroll as non-degree students for up to seven credits per semester of academic courses in addition

to their ALCP courses. Students whose proficiency levels later prove inadequate for success in the academic courses may be withdrawn at the discretion of the academic course instructor and the ALCP coordinator. Once students achieve the necessary language qualification and pursue full admission to the university, they may apply credits of academic courses completed while in non-degree seeking status toward U of I degree programs (other university restrictions may apply).

International Student Health and Accident Insurance

Supplemental health and accident insurance is mandatory for international students who hold nonresident alien visas and all accompanying dependents. Students must purchase and maintain the UI Student Health Insurance policy (SHIP) or document coverage of an equivalent policy with the International Programs Office before classes begin. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See information on insurance (<https://www.uidaho.edu/current-students/student-health-services/insurance/>) in the Student Services section.

Visa Status

In order to pursue a degree, international students must be authorized in their current visa status. Immigration regulations require that international students holding F-1 (non-sponsored student) or J-1 (exchange visitor, student classification) visas be certified as full-time students during the academic year. Graduate students are thus required to take a minimum of nine credit hours. For all other visa holders, contact the International Programs Office for rules governing taking courses while in the U.S.

International Student Advisors

The international student advisors (ISAs) are involved with an international student's progress at every stage of the educational process. Once a student has been admitted, the ISAs provide general information about cultural adjustment and the educational system, as well as specific details regarding immigration regulations. Interested students may be paired with local host families for cultural activities through the university's International Friendship Association. All matters pertaining to a student's non-immigrant status are handled through the International Programs Office. A mandatory orientation before registration provides new students with assistance on initial questions. After this orientation, students are invited to visit the ISAs at any time with questions or concerns relating to immigration matters, education, finances, and cultural adjustment. The ISAs also serve as official liaisons between students and their consular offices or sponsoring agencies and the Department of Homeland Security.

International Student Fees

The University of Idaho's International Services strives to provide international students with the best possible support and assistance throughout their time at U of I. Each semester, International Services provides immigration advising, regular programming, cross-cultural activities, and academic support to ensure students feel they have a home away from home. New students complete pre-departure and in-person orientation that cover mandatory immigration compliance information. There is a one-time \$100 International Student Orientation fee as well as a \$100 International Student fee each semester that support programs dedicated to international students.

Evaluation of Transfer Credits

Upon application to the University of Idaho (U of I) and receipt of all official transcripts, all college-level coursework completed at institutions

accredited by approved accreditation agencies is evaluated by the Registrar's Office. All credits accepted must be from U.S. institutions accredited by one of the U of I approved accrediting associations or from non-US institutions recognized by the appropriate authorities in their respective countries. After an official transcript has been evaluated, an email confirming all transferred courses will be sent to the student.

Courses not equivalent to a U of I course will be articulated to an elective course, denoted by subject code and a course number 000. The U of I maintains a list of transfer course equivalencies from accredited colleges and universities on the Registrar's web page: <http://www.uidaho.edu/registrar/transfer> (<http://www.uidaho.edu/registrar/transfer/>).

Courses Receiving No Credit

The U of I reserves the right to deny credit for courses that are not compatible with those offered in its baccalaureate degree programs. Courses that receive no credit include the following:

- Courses considered below college-level that are categorized as developmental or remedial.
- Coursework earned at an institution that is not accredited by an approved accreditation agency.
- Courses that provide instruction in a particular religious doctrine.

Quarter Credit Conversion

Credits transferred to the U of I from quarter system schools are converted to semester system credits. One quarter credit is equal to 2/3 (0.667) of one semester credit.

Quarter credits are recorded as follows:

- 1.00 quarter credit = 0.66 semester credits
- 2.00 quarter credits = 1.33 semester credits
- 3.00 quarter credits = 2.00 semester credits
- 4.00 quarter credits = 2.66 semester credits
- 5.00 quarter credits = 3.33 semester credits

Degree Applicability

The U of I degree audit details the applicability of the transfer courses to the student's program of study and general education requirements. The student's major department may further evaluate the applicability of the transfer courses to the student's selected program of study. Determination of how transfer courses may apply to the student's major requirements is the sole discretion of the department.

Transfer GPA

As per regulation E-4 (p. 74), transfer credits are not included in the computation of a student's grade point average at the University of Idaho.

Transfer Course Repeat

See regulation E-5-b (p. 74).

Challenging an Articulation

A course articulation may be challenged by providing additional information regarding course content, i.e. course syllabus, course outline, etc., to the Registrar's Office. The additional information provided will be reviewed by the corresponding U of I department for a final articulation decision.

Credit Review Process

Students with courses from educational sources that do not have approved accreditation may request to have the courses reviewed by the U of I University Curriculum Committee (UCC) for credit. Should you wish to have your courses reviewed by the UCC, you must submit the following to the Office of the Registrar:

- A letter indicating the specific courses you want to have reviewed
- An official transcript from the institution
- Course descriptions and syllabi for each course to be reviewed

The Office of the Registrar will then forward the course information to the corresponding academic department for their review. After the Office of the Registrar has received the recommendations from the corresponding department(s), the information will be presented to the UCC. At that time, the UCC may request additional information from the student.

Upon approval by the UCC, the decision on each course will be sent to the Office of the Registrar, who in-turn will notify the student and record the approved courses on the transfer portion of the student's transcript.

Credits earned at an institution that is a suspected diploma/degree mill will not be acceptable to the University of Idaho.

Credit Based on Test Scores

Academic credit may be granted to specific students who meet minimum score requirements on some of the following tests: ACT, SAT, COMPASS, DSST, College Board Advanced Placement (AP), College Level Examination Program (CLEP), International Baccalaureate (IB), Global Assessment Certificate (GAC), and General Certificate of Education Examinations (A-Level). (See regulation I (p. 77).)

Credit for Military Service

Prior credits earned will be reviewed for all VA Beneficiaries. Credit may be given for military courses according to recommendations in the American Council on Education (ACE) Service Guide. Credit is not awarded for the military occupation specialties or basic training courses. Credits awarded for military service are recorded with a grade of pass or fail only and will appear on U of I transcripts after the student is officially admitted. Official documentation is necessary and may include official DD214 papers, official certificates showing completion of courses, and/or an official DD295 Form. Official documents should be sent to the Office of the Registrar, PO Box 444260, Moscow, ID 83844-4260. (See regulation J-5-b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>) for credit limitations.)

International Transfer

Transcripts from non-U.S. institutions must be evaluated by the Office of the Registrar. An evaluation by an independent academic credential evaluation service may be required for some transcripts. Transfer credit from non-U.S. institutions are recorded with grades of pass or fail only. Accepted transfer credits are recorded on the student's permanent record after officially being admitted.

Graduate Transfer

Graduate transfer credits from an approved accredited institution may be used towards a U of I graduate degree upon approval from the student's

major professor and the College of Graduate Studies. All graduate level transfer credit is recorded with grades of Pass or Fail only.

Graduate transfer credits from non-U.S. institutions must be evaluated by an academic credential service prior to credits being applied to student's transcript.

For more information regarding graduate transfers, please see the general requirements for Master's Degrees (p. 300), Education Specialist's Degrees (p. 302), or Doctoral Degrees (p. 302).

Law Transfer

See the College of Law Admission Requirements (p. 305).

General Education Requirements for Transfer Students

One of the requirements for a University of Idaho (U of I) baccalaureate degree is the fulfillment of the general education requirements.

Students who earn an Associate of Arts (A.A.) or Associate of Science (A.S.) degree from a regionally accredited institution will be considered as satisfying the general education requirements. Students who have completed the Intersegmental General Education Transfer Curriculum (IGETC) at a regionally-accredited California community college will be considered as satisfying the general education requirements.

Students who have completed the 36-credit general education requirements, as defined in Idaho State Board Policy III.N, without an Associate of Arts or Associate of Science Degree and transfer from a regionally accredited postsecondary institution in Idaho will not be required to complete additional general education requirements at U of I.

Students who enter U of I without having completed an A.A. or A.S. or are not certified as having completed the equivalent of Idaho's State Board of Education general-education core have two options for fulfilling the general-education requirement.

One option is to satisfy the requirement as outlined in regulation J-3 (p. 78) in this catalog. In this case, transfer credits are evaluated on a course-by-course basis for equivalency to courses specified in J-3, and deficiencies are made up by completing the necessary additional credits in non-duplicating courses listed in J-3.

The second option is to satisfy the general education requirements established by the Idaho State Board of Education as set forth immediately below. In this case, transfer credits are evaluated by subject matter, rather than on a course-by-course basis, and deficiencies are made up by completing the necessary additional credits in non-duplicating courses listed in J-3. Courses that are approved to satisfy a core requirement can be used to satisfy those requirements even if the course is completed prior to being approved as a core course.

Alternative General Education Requirements for Transfer Students

A minimum of 36 credits is required from the following categories. Additional courses may be completed in any of the below categories to complete the required 36 credits.

1. **Written Communication:** 3-6 credits (Depending on initial placement)
2. **Oral Communication:** 2 credits
3. **Mathematical Ways of Knowing:** 3 credits

4. **Scientific Ways of Knowing:** 7 credits (From two different disciplines with at least one laboratory or field experience)
5. **Humanistic and Artistic Ways of Knowing:** 6 credits (From two different disciplines)
6. **Social and Behavioral Ways of Knowing:** 6 credits (From two different disciplines)

Graduate Admission to the University

Graduate programs are offered through one or more of the following locations: Moscow and the U of I's Centers in Boise, Coeur d'Alene, or Idaho Falls, as well as Engineering Outreach or other distance learning opportunities. Please see www.uidaho.edu/admissions/graduate (<http://www.uidaho.edu/admissions/graduate/>) to determine where graduate programs are delivered.

More than 600 faculty members participate in teaching and research. In addition to the accreditation of some individual programs, the University is accredited by the Northwest Commission on Colleges and Universities.

Academic Requirements for Graduate Admission

Students who satisfy all criteria listed below will be considered for graduate admission to the University of Idaho:

1. Have a bachelor's degree from a regionally accredited U.S. college or university or recognized international institution. If the degree is not from a regionally accredited institution, the application may be reviewed by the department and by the College of Graduate Studies.
Or
Have completed three years of undergraduate study in an international accredited institution which has a Memorandum of Understanding in place with the University of Idaho for a cooperative 3+2 program leading to a graduate degree. Cooperative 3+2 programs may have higher entrance requirements (see COGS (<http://www.uidaho.edu/cogs/>) website for a list of 3+2 programs).
2. Have an undergraduate cumulative grade-point average of 3.00 or higher or an undergraduate grade-point average of 3.00 or higher for the last 60 semester credits (or 90 quarter credits),
3. Have maintained at least a 3.00 grade-point average in subsequent academic work if any, and
4. Have met any additional requirements set forth by the department or program which may be required. Please review the graduate admissions website for specific departmental/program requirements at www.uidaho.edu/admissions/graduate (<http://www.uidaho.edu/admissions/graduate/>).
5. Have been reviewed and recommended for acceptance by the academic unit administering the program in which the student seeks to enroll. For individual academic unit admission requirements, please refer to individual department sections of this catalog or consult the Graduate Admissions website at www.uidaho.edu/admissions/graduate (<http://www.uidaho.edu/admissions/graduate/>).

The College of Graduate Studies requires all applicants to provide three letters of recommendation, a one to two-page Statement of Career

Objectives, a one to two-page resume/curriculum vitae, and academic records of all colleges/universities attended.

Students planning to apply for work leading to a graduate degree should contact the academic unit in which they wish to major **before** applying for graduate admission. All admission recommendations are made at the academic unit level with final admission decisions made by the College of Graduate Studies. Admission is granted **only** to a specific degree and program, and initial admission is granted for a specific semester.

English Language Proficiency for Graduate Admissions

U of I requires all applicants whose primary language is not English to demonstrate English language proficiency. Because most applicants report the Test of English as a Foreign Language (TOEFL) score, U of I bases its minimum English language proficiency requirements on the TOEFL. U of I College of Graduate Studies requires a minimum TOEFL score of 79. Equivalent measures of proficiency and minimum scores acceptable to U of I include the Cambridge IELTS (6.5) and the PTE Academic (58). Official scores must be sent directly from the test administering agency at the point of admission and cannot be more than two years old at the date of application.

It is important to verify the departmental minimum language score requirement as some departments require a score higher than the university minimum. Exceptions to the minimum language score requirement are made for the following:

1. Those from official English-speaking countries,
2. Those who have earned a bachelor degree or higher from another U.S. institution, or
3. Those who have completed the University of Idaho American Language and Culture Program (ALCP) level 6.

Priority Deadlines and Application Fees for Graduate Students

Domestic Applicants	International Applicants
Fall-February 1	Fall-February 1
Spring-September 1	Spring-September 1
Summer-February 1	Summer-February 1
Non-refundable application fee \$60	Non-refundable application fee \$70

By meeting the priority deadline, the student will receive full consideration for College of Graduate Studies tuition waivers. Individual academic units may have earlier admission deadlines, especially for applicants seeking financial assistance or assistantships.

The academic unit will determine which terms they will admit students. Check the Graduate Admission Department Requirements website for applicable admission terms (www.uidaho.edu/admissions/graduate/graduate-programs (<http://www.uidaho.edu/admissions/graduate/graduate-programs/>)).

Applications received after the above deadlines but before the official start of the semester for which the applicant is seeking entry will be accepted only if additional students can be accommodated.

Please consult the graduate admissions website at www.uidaho.edu/admissions/graduate/ for

more information regarding academic departments' requirements and deadlines.

The Graduate Admissions Office is not authorized to release application information to anyone other than the applicant without written authorization. Please submit a Student Consent for Release Form (<http://www.uidaho.edu/registrar/forms/>) (available on the admissions website) if you want someone specific to be given information regarding your admission status.

Deadline for International Application for Admission

To provide time for evaluation, for notice of admission status to reach the applicant, and for United States Immigration and Customs Enforcement (USICE) requirements to be met for issuance of a student visa, applications and credential should be received by the Graduate Admissions Office no later than the following dates: May 1 for fall semester, October 1 for spring semester, or March 15 for summer session.

Graduate Record Examination

The Graduate Record Examination (GRE) is not a College of Graduate Studies requirement but is required by some academic units. Official GRE results must come from the Educational Testing Service. In rare cases, if the examination is beyond 5 years old, the Director of Graduate Studies (DGS) may allow students to provide unofficial results of the examination with their admission application to facilitate evaluation and acceptance.

Transcripts and Application for Graduate Admission

Students wishing to enter the College of Graduate Studies must submit a University of Idaho application for admission, three letters of recommendation from professional/academic references, a statement of career objectives, a vitae/resume, and transcripts of all college work.

A copy of the official transcript (and English translation for all foreign language documents) for every college and university the applicant attended is acceptable for the application review process. Applicants may upload copies of official transcripts and translations via the online application. Uploaded transcripts must be legible; illegible transcripts will not be processed. COGS recommends scanning at 600 dpi resolution.

Official transcripts of all college work will be required at the point of admission and must be sent directly to the Graduate Admissions Office. Applicants who have already earned a graduate degree from a regionally accredited U.S. institution and are seeking a graduate degree at Idaho will only need to submit official transcripts from the graduate degree granting institution. All documents received as part of the application process become part of the official Graduate Admissions application file.

Official Academic Credentials for Graduate Students

Transcripts, mark sheets, grade reports, or examination results, along with degree certificates from all higher education institutions attended, will be required to complete acceptance. Graduate admissions accepts electronic transcripts from the National Student Clearinghouse, Parchment, and eSCRIPT-SAFE. When sending official transcripts from schools located in non-English-speaking countries, each institution must submit both the English translation plus an original language record. Academic Credentials should be sent Express Mail through (FedEx, UPS, or DHL) to the following address: University of Idaho Graduate Admissions Office, 820 Idaho Ave. Morrill Hall 205 Moscow, ID 83844-3019. Transcripts sent through U.S. Mail should be sent to

University of Idaho Graduate Admissions Office at 875 Perimeter Drive MS3019, Moscow Idaho, 83844-3019. Transcripts not sent directly from an institution or are hand delivered in a sealed envelope, stamped and or signed by the appropriate authority may be considered official upon evaluation. If transcripts are deemed unofficial, then official transcripts must be received before registration opens for subsequent terms, or a registration hold will be placed on the students' registration. Any discrepancies later found between the student-provided/uploaded transcripts and official transcripts will be grounds for immediate dismissal. The College of Graduate Studies reserves the right to request a third-party, course-by-course, evaluation of transcripts at any time. The cost of the evaluation will be the responsibility of the student.

Acceptance to the College of Graduate Studies

When admitted to the College of Graduate Studies, a graduate applicant will be issued a letter of acceptance. Acceptance is granted for a specified term. If an applicant does not register for the term admitted but wishes to enroll in a future term, the applicant may request a deferment.

Graduate Admission Categories

Regular Enrollment

Regular enrollment for graduate study leading toward an advanced degree may be granted to a student who satisfies all of the following criteria:

1. Has a bachelor's degree from a college or university accredited by a regionally accrediting association,
2. Has an undergraduate cumulative grade-point average of 3.00 or higher or an undergraduate grade-point average of 3.00 or higher for the last 60 semester credits (or 90 quarter credits),
3. Has maintained at least a 3.00 grade-point average in subsequent academic work if any, and
4. Has been reviewed and recommended for acceptance by the department administering the program in which the student seeks to enroll.

Students who are part of a recognized 3+2 program will be considered to be regularly admitted when they have met the specific admission requirements of COGS and any enhanced requirements outlined by the department which is offering the 3+2 program.

Provisional Enrollment

A student who is not eligible for regular enrollment may be considered for provisional enrollment (on the master's level only) if approved by the DGS and at least two of the following conditions are met:

1. The student's undergraduate GPA shows steady improvement,
2. The student has taken post-baccalaureate undergraduate level course work with A and/or B grades,
3. The student has achieved the 75th percentile on the relevant GRE or equivalent exam, and
4. The student has been out of school for five or more years and has been working for at least one year in the field of the proposed graduate major.

The academic unit specifies provisions that the student must fulfill to be advanced to regular enrollment at the time of their acceptance and should not be changed. Provisional enrollment is not available to

international students who hold nonresident alien visas and students who are to be appointed to assistantships.

A student may not remain in provisional enrollment status for more than one academic year or after the completion of nine credits.

A student will be advanced from provisional to regular enrollment provided they maintain a GPA of at least 3.00 each semester (a higher GPA may be specified), fulfills the conditions that were specified at the time of initial enrollment, and receives no incomplete grades. A student who does not meet the stated conditions for advancement cannot continue in the College of Graduate Studies or enroll in 500-level courses and is subject to normal disqualification and reinstatement procedures. It is the student's responsibility to be in touch with the administrative unit regarding their progress toward meeting the conditions for regular admission.

The conditions specified for a student's advancement to regular enrollment are established at the time of their acceptance and must not be changed (i.e., either strengthened or relaxed) thereafter.

Academic units need not require a student to make up ALL of their academic deficiencies while in provisional enrollment. Performance on a limited selection of them should suffice to demonstrate whether or not the student has the ability to do satisfactory graduate work. Remaining deficiencies, if any, can be made up after the student is in regular enrollment. The academic unit must be sure that any courses the student is required to take while in provisional enrollment will, in fact, be offered during that period.

Deferred Admission

The College of Graduate Studies will, on the recommendation of the department/program Director of Graduate Studies (DGS), allow a student to defer their admission for up to one year or for cohort programs to the start of the next admission cycle.

To defer admission to a new term, students must complete a deferred admission application. To gain access to the deferral application, students will need to email the Graduate Admissions Office (graduateadmissions@uidaho.edu) and request the active link. A non-refundable \$30 processing fee will be required when the application to defer is submitted.

Note: Additional documents may be required to process the deferred admission application.

Conditional Admission

Conditional admission may be granted to applicants who qualify academically but who have not yet met the university's minimum English language proficiency requirement. Conditional admission status is good for two years. Students may enroll in U of I's American Language and Culture Program (ALCP) to achieve the academic units' English language requirement. Students must meet the units' English Language proficiency requirements prior to being granted full admission and advancing into their degree program. Please note that not all academic units grant conditional admission. International students in a 3+2 program are not eligible for conditional admission.

Concurrent Enrollment as an Option of Conditional Admission

Students enrolled in ALCP Level 5 or Level 6 may, in consultation with the coordinator of ALCP and the course instructor, obtain approval to enroll as non-degree students for up to 7 credits per semester of

academic courses in addition to their full-time ALCP courses. Students whose proficiency levels later prove inadequate for success in the academic courses may be withdrawn at the discretion of the academic course instructor and the ALCP coordinator. Once students achieve the necessary language qualification and gain full admission to the university, they may apply the credits of academic courses completed while in conditional admission status toward U of I degree programs (other university and College of Graduate Studies restrictions may apply).

Unclassified Enrollment

Unclassified enrollment is for students who do not wish to work for a graduate degree and is not to be used as a probationary category. Admission as an unclassified student does not guarantee subsequent transfer to a degree program. This enrollment category is not open to international students who hold nonresident alien visas or to students who are to be appointed to assistantships. Students on unclassified enrollment are not eligible for Title IV financial aid.

Non-degree Student

Refer to the "Non-Degree Admission Requirements" section above for a full description of this classification. Non-degree students are not admitted to the College of Graduate Studies. They may, however, take graduate courses with permission of the instructor and the Dean of the College of Graduate Studies if they have earned a baccalaureate degree from a regionally accredited institution with an overall 3.00 GPA. Non-degree students are not eligible for Title IV financial aid. If a non-degree student receives a grade of 'C', 'D', or 'F' in a 500-level course, they loses the privilege of taking more 500-level courses.

Application Requirements for Graduate Academic Certificates

Applicants must complete the online application for a Graduate Level Academic certificate (\$30.00 application fee) and provide evidence of a completed bachelor's degree from a regionally accredited institution (unofficial transcripts will be accepted for graduate certificate applications) in a generally related area with an overall GPA of at least 3.0. Students who have below a 3.0 cumulative GPA on their undergraduate record and wish to enroll in a graduate certificate program are encouraged to apply and may be admitted based on departmental review. Certificate only students will be classified as certificate seeking at the graduate level and are not eligible for financial aid. International graduate certificate applicants must meet the University of Idaho language requirement. Due to the nature of this program, immigration regulations prohibit students requiring an F-1 or J-1 visa admission to this program. Current graduate degree seeking University of Idaho Students will be required to fill out a Change of Curriculum form adding the graduate certificate as an additional curriculum. Students should obtain the proper signatures from the department and return to the Office of the Registrar for processing. Current undergraduate students wishing to earn a graduate academic certificate must be eligible to participate in graduate level courses (minimum requirements: senior standing and a 3.0 U of I overall GPA). If the course is not being used for the undergraduate degree, the student should file a Course Reservation Request form to reserve the course for the GR transcript (maximum of 12 credits may be reserved for the graduate transcript). Once the student earns their bachelor's degree, they may apply as a graduate certificate seeking student and complete the certificate program.

Concurrent or Multiple Level Curricula for Graduate Students

A graduate student may simultaneously enroll in an undergraduate, graduate, or law program. The "Credit Reservation Form" indicating course use (graduate, undergraduate or law) is available and must be filed each semester or session. Please note that students seeking a degree at more than one level will need to officially apply for admission at the appropriate level. Placing courses from the undergraduate level to the graduate level or graduate level to the undergraduate level, when no degree is sought, does not require admission to the level where the course will be placed. Student fees for the courses are determined by the student's primary level; however, an undergraduate may be charged graduate fees for any courses placed on the graduate transcript.

Seniors in 500-Level Courses

A senior who has a cumulative grade-point average of 3.00 or higher may enroll in 500-level courses. The course(s) may be placed on either the undergraduate or the graduate transcript but will automatically be placed on the undergraduate transcript unless the student completes a "Credit Reservation Form" form indicating the appropriate transcript placement for the course. The placing of courses on a graduate transcript does not admit or guarantee subsequent admission of such students to the Graduate College. The student must submit the "Credit Reservation Form" to the College of Graduate Studies Office before the last day of the semester in which the Bachelor's Degree is earned. Once a student graduates with their undergraduate degree, courses will not be moved to a graduate level transcript. Students may be assessed graduate fees for courses placed on a graduate transcript.

Returning Students

University of Idaho graduate students who have been absent for two or more years or who have completed one degree and wish to enroll in further courses must file an Application for Readmission. Readmission must be approved by the department in whose degree program returning graduate students wishes to enroll.

A Returning Graduate Student wishing to return to the same degree/major:

Graduate Admissions will begin the approval process upon receipt of the online Application for Re-Admission (see B-1). The application must be completed for the program you were previously enrolled.

A Returning Graduate Student wishing to change to different degree/major:

Students who wish admission in a new degree/major option or want to change to different program must submit a Change of Curriculum form to College of Graduate Studies with all the appropriate departmental approvals. Returning students changing programs must complete an online Application for Re-Admission (indicating the new degree or program) with Graduate Admissions in addition to the Change of Curriculum form.

Additional Information for International Graduate Students

The College of Graduate Studies welcomes applications from qualified students from other countries. International applicants are expected to have qualifications equivalent to those required of other graduate students.

Prospective international students must have the equivalent of a U.S. Bachelor's Degree from a recognized institution. This is usually a minimum of four years of study beyond grade 12 or equivalent. The college or university must be recognized as a degree granting higher education institution by the Ministry of Education or its equivalent in the home country.

For applicants who have completed their baccalaureate degree in a country that is a signatory of the Bologna Declaration, a Bologna compliant baccalaureate degree at a recognized college or university of at least three years duration may be acceptable if recommended by the academic program.

For other three-year Bachelor's Degree holders: Not all three-year degrees are equivalent to a U.S. Bachelor Degree. A non-Bologna compliant baccalaureate degree of at least three years duration from a recognized university, may be acceptable if recommended by the academic program and if approved by College of Graduate Studies.

Please visit the graduate admissions website prior to application to determine if your degree is acceptable and/or equivalent of a U.S. Bachelor's Degree.

Copy of Passport or National Identity Card for International Graduate Students

The applicant should submit a clear and readable copy of their passport, and if currently in the U.S., a copy of the applicant's visa.

Financial Verification for International Graduate Students

The U.S. Citizenship and Immigration Services regulations require that every student verify the availability of funds to pay for educational and living expenses before an I-20 or DS-2019 form to obtain a visa to enter the U.S. can be issued. Applicants may submit application materials without financial verification. However, if the department is recommending admission into the graduate program, the student will be required to provide, regardless of the source of funding, a completed "Certificate of Financial Responsibility" and all supporting documentation before an I-20 or DS-2019 will be issued.

Please see www.uidaho.edu/admissions/graduate/graduate-admissions-forms (<http://www.uidaho.edu/admissions/graduate/graduate-admissions-forms/>) for financial responsibility forms.

Enrollment Requirements for International Graduate Students

In order to pursue a degree, international students must be authorized in their current visa status. Immigration regulations require that international students holding F-1 or J-1 student visas be certified as full-time students during the academic year. F-1 graduate students are required to be enrolled in 9 credit hours and are allowed to take up to 3 credits of on-line coursework towards this requirement. J-1 visa holders are also required to enroll in 9 credit hours, but are not allowed to take online classes toward the 9-credit requirement. Other visa categories may be eligible to study in the U.S. Students who do not hold an F-1 or J-1 student status should contact the International Programs Office for rules governing enrollment while in the U.S.

Health and Accident Insurance for International Graduate Students

Supplemental health and accident insurance is mandatory for international students who hold nonresident alien visas and all accompanying dependents. Students must purchase and maintain the UI health insurance (SHIP) policy or document coverage of an equivalent policy with the International Programs Office before they are allowed to register or attend classes. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See information on insurance in the Student Services section.

International Student Advisors

The international student advisors (ISAs) are involved with an international student's progress at every stage of the educational process. Once a student has been admitted, the ISAs provide general information about cultural adjustment and the educational system, as well as specific details regarding immigration regulations. Interested students may be paired with local host families for cultural activities through the university's International Friendship Association. All matters pertaining to a student's non-immigrant status are handled through the International Programs Office. A mandatory orientation before registration provides new students with assistance on initial questions. After this orientation, students are invited to visit the ISAs at any time with questions or concerns relating to immigration matters, education, finances, and cultural adjustment. The ISAs also serve as official liaisons between students and their consular offices or sponsoring agencies and the Department of Homeland Security.

International Student Fees for International Graduate Students

The University of Idaho's International Programs Office strives to provide new international students with the greatest assistance possible as they settle into their new homes in Moscow. As such, attendance at the multi-day international student orientation is required for all new students. This orientation will include a complete immigration workshop as well as offer several meals and other activities. There is a one-time cost of \$65 for all new international students, which will be added to their student account after they have attended this event. Any student who does not attend this orientation will be charged an additional \$100 and be required to attend a late orientation session for a total cost of \$165. There will be a \$50 per semester program cost to support international student programming at the university. Please note: These costs do not apply to students on UI exchange programs.

International Graduate Ambassador Program

The International Ambassador Program assists prospective international graduate students in learning about the University of Idaho community and culture by connecting them with current international graduate students from their home country. Ambassadors may also serve as a liaison between graduate programs and prospective international students by aiding the communication process associated with recruiting international students. The International Graduate Ambassador Program is housed within the College of Graduate Studies under the direction of the Graduate Recruitment Coordinator. Please email uigradstudies@uidaho.edu for additional information on the International Graduate Ambassador Program.

Alumni and Career Services

Alumni Association

Alumni Center; 208-885-6154; alumni@uidaho.edu; www.uidaho.edu/alumni (https://www.uidaho.edu/alumni/)

The University of Idaho Alumni Association exists to foster and coordinate the support of alumni and friends of the university in strengthening the academic, research, service, and leadership-building programs of the institution. It also provides individual alumni services to its non-dues paying members throughout the world.

All former UI students who earned a UI degree or at least 90 credits at UI and associate and honorary alumni are members of the association. The director of alumni relations and staff, along with an elected board of directors, guide the many programs, services, and activities for the more than 75,000 members.

The Alumni Association strives to keep alumni informed about their alma mater, encourage university loyalty and material support, and apprise the university community of alumni opinion. Through a variety of awards, the association honors outstanding alumni, students, or other individuals who provide exceptional service to the institution or state of Idaho. Scholarships are given by the association to help both entering and continuing students at the university.

Alumni can maintain close ties with the university through Alumni Association services, such as travel tours and campus, national, and worldwide gatherings for special UI occasions, including reunions and Silver and Gold Events. The association also provides and organizes support for the university through active organizations, such as the Student Alumni Relations Board and the UI Retirees Association.

Areas of recent emphasis for the association include recruiting and informing prospective students about the university and increasing volunteer support through the development of alumni chapters and constituency groups. The association is also strengthening and expanding its membership services through use of the Internet and lifetime e-mail service.

Career Services

Idaho Commons 334; (208) 885-6121; careerservices@uidaho.edu; www.uidaho.edu/careerservices (https://www.uidaho.edu/careerservices/)

The university is committed to providing students with a comprehensive set of career exploration and professional development services, including assistance in identifying career and major interests, developing skills and experience through academically relevant work and experiential learning opportunities, preparing professional job/intern application materials, educating students on job search strategies, and preparing students for interviews. In addition to serving UI students and alumni, Career Services also provides assistance to academic departments and employers. Career Services provides University of Idaho students and alumni with services and resources that empower them as they make critical life decisions and pursue career success. We enhance classroom learning by facilitating career exploration, experiential learning opportunities, and access to future employers.

Career Decision-Making and Professional Development Services are available to UI students and alumni of all majors. In today's job market, well-educated job candidates with relevant work experience are highly

desired. Career Advising Liaisons help students prepare for employment by providing career education through workshops, career classes, group presentations, and individual advising sessions. The Career Services office serves students at all stages of career development, from making decisions on their major and career interests to identifying and participating in experiential learning opportunities (internships, jobs, research experiences, and service-learning courses) to applying for professional careers upon graduation. A strong emphasis is placed upon the value of experiential learning. Students are encouraged to participate in a variety of activities to apply classroom theory in a real-life setting, clarify their educational and career goals, gain practical skills and experiences, and learn more about themselves, their community, and their future professions.

In addition to career guidance provided by Career Advising Liaisons, Career Services also sponsors numerous professional events that connect students with potential employers. Some of these events include on-campus interviews, career fairs, etiquette dinners, and networking nights. These events connect students with hundreds of employers seeking candidates for their full-time, internship, and summer employment opportunities as well as graduate and professional school opportunities.

Career Services also promotes civic engagement and hands-on learning through the Service Learning Center. By training faculty on the service-learning pedagogy and providing support for service-learning projects, a growing number of students experience a much deeper level of learning through participation in service projects within their courses.

American Language and Culture Program

The American Language and Culture Program (ALCP) offers full-time courses in intensive English for Academic Preparation. Courses are offered throughout the year, with two eight-week sessions during each of the fall and spring semesters and one six-week session in the summer. The program also offers specialized short-term programs by arrangement.

Students wishing to improve their English or achieve the required level of English language proficiency for admittance to UI can work toward that goal while living on or off the UI campus and attending the American Language and Culture Program (ALCP). The curriculum emphasizes reading, writing, speaking, listening, and grammar skills from beginning to advanced levels. At the University of Idaho, students who pass Level 5 may use their passing grades as a substitute for the English language proficiency examination for undergraduate admission and passing grades in level 6 for admission into many graduate programs. ALCP students take part in special cultural activities and learn about U.S. culture and U.S. university culture.

For more information and/or applications, contact ALCP through the International Programs Office located at the Living Learning Center at 901 Paradise Creek Street, Building #3, Ground Floor; call 208-885-8984; email alcp@uidaho.edu; or visit our website at www.uidaho.edu/international/alcp (<http://www.uidaho.edu/international/alcp/>).

Applicants to the University of Idaho, please note:

Deferred admission

Deferred admission may be granted to applicants who qualify academically, but who have not yet met UI's minimum English language

proficiency requirement. In deferred status, students enroll in UI's American Language and Culture Program to achieve their department's English language requirement prior to being granted full admission and commencing their degree programs.

Concurrent Enrollment

Concurrent enrollment is available to ALCP students at Levels 5 and 6. With the consent of the ALCP coordinator and the instructor of the course(s), qualified ALCP students may take up to 7 credits of academic coursework at the undergraduate and graduate levels while still remaining enrolled full time in ALCP.

Athletics and Extracurriculars

- Intercollegiate Athletics (p. 54)
- Athletic Department Mission (p. 54)
- Athletic Program Goals (p. 54)
- Student-Athlete Support Services (p. 54)
- Recreational, Social, Extracurricular, and Co-curricular Activities (p. 54)
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Intercollegiate Athletics

Athletics Department; ASUI Kibbie Dome 2302;
208-885-0200; [www.GoVandals.com](http://www.govandals.com) (<http://www.govandals.com/>)

Idaho has a proud athletic tradition and sponsors 16 intercollegiate sports for men and women. The teams are known as the Vandals and compete as a Division I member of the NCAA and Big Sky (football, men's and women's basketball, volleyball, soccer, men's and women's indoor track and field, men's and women's tennis, men's and women's golf, and men's and women's cross country) and Western Athletic (swimming and diving) conferences.

The men's program consists of teams in football, basketball, cross country, indoor and outdoor track and field, tennis, and golf. The women's program consists of teams in basketball, volleyball, cross country, indoor and outdoor track and field, tennis, golf, soccer, and swimming and diving.

The athletic program enjoys splendid facilities. The Kibbie-ASUI Activity Center, known as the "Kibbie Dome," houses the Athletic Department offices, team locker rooms, weight room, athletic training facilities, and academic support unit. The Kibbie Dome itself is the site for football, and men's and women's basketball games are played at the Cowan Spectrum within the Kibbie Dome. Historic Memorial Gymnasium is the home of Idaho volleyball. Track and field and tennis make great use of the Kibbie Dome's indoor facilities for practice and competition as well, with a five-lane, 290-meter track and nine indoor tennis courts. The women's soccer team plays its home matches on Guy Wicks Field. The university's 18-hole championship golf course, numerous outdoor tennis courts, and the UI Swim Center complete the facility picture.

Athletic Department Mission

The University of Idaho Department of Athletics is committed to enhancing the visibility and image of the university by:

- Developing and maintaining competitive, integrity-based athletic programs;
- Uniting students, faculty, staff, alumni, and the community;
- Educating and graduating student-athletes; and
- Competing for championships.

The core values are tradition, pride, commitment to excellence, customer focus, accountability, integrity, diversity, and gender equity.

Athletic Program Goals

The goals of the UI athletics program are:

1. Recruit and prepare student-athletes for successful competition academically, athletically, and socially. Contend for Western Athletic Conference Championships and graduate student-athletes at rates above national averages.

2. Establish a national image for the University of Idaho and engage the campus and community. Improve and expand our image through marketing and outreach activities.
3. Promote diversity and gender equity. Conduct an athletics program that incorporates, fosters, and enhances gender equity and diversity.
4. Increase revenue from Development and Corporate Partner (Learfield) Sponsorship Opportunities. Annually increase revenue toward the average of Western Athletic Department institutions.
5. Enhance internal and external relationships. Strengthen our internal and external relationships through timely meetings, increased communications, and the exhibition of high standards of personal conduct at all times.
6. Attain financial stability. Develop a user-friendly and informative budget process that ensures fiscal accountability and contributes to an athletic reserve fund.
7. Continue improving facilities. Complete fund raising for the Kibbie Dome and identify future priorities from feasibility study.
8. Enhance support services. Inventory and evaluate support services and processes for efficiency and effectiveness.
9. Recruit, retain, recognize, and reward current and former coaches, staff, and student-athletes. Identify and offer rewards and recognition for current and former student-athletes, coaches, and staff.

Student-Athlete Support Services

Student-Athlete Support Services is committed to the education and success of student-athletes at the University of Idaho. SASS collaborates with cross-campus resources to support student-athletes' academic progress, maintain NCAA eligibility, and develop well-rounded, employable graduates. This is accomplished through nurturing study and social skill sets; encouraging initiative, self-motivation, and accountability; and fostering positive, meaningful relationships within the Vandal community and beyond.

Recreational, Social, Extracurricular, and Co-curricular Activities

Idaho Commons; 208-885-2667 Bruce Pitman Center
208-885-4636; www.uidaho.edu/studentaffairs/idaho-commons-and-student-union (<https://www.uidaho.edu/studentaffairs/idaho-commons-and-student-union/>)

Many of the programs and activities at the Idaho Commons and Student Union are co-curricular in design, linking students' academic endeavors with out-of-class learning experiences. Students can get involved in numerous functions and activities that meet their personal goals for individual growth and leisure time activity. UI student organizations in the Idaho Commons and Student Union are integral to the planning and implementation of educational, cultural, and recreational activities for the campus.

ASUI Productions is a forum for students to organize almost all entertainment each year including blockbuster film series, small concerts, coffeehouses, "open mic" nights, comedians, educational speakers, and nationally touring bands. In the process, students gain experience with event planning and marketing.

Idaho Commons and Student Union Programs feature weekly foreign and alternative films, noontime and summertime concerts, and educational enrichment events. A College Bowl Tournament is also sponsored by ASUI Productions. For more information, contact the Student Activities

and Leadership Programs Office in the Idaho Student Union Building Room 302, 208-885-6331.

ASUI - Student Government is dedicated to addressing the needs of undergraduate students and the campus community at large. The Associated Students University of Idaho is an organization that represents the most important element of the university: the students. The ASUI Senate, while acting as a liaison between the undergraduate student population and university administration, plays a very active role in shaping policy. Student senators, who are elected to a two-semester term, are also given the opportunity to work with and learn more about the Idaho State Legislature and the State Board of Education. For those students who have an interest in and want to shape policy in a specific area of campus life, the ASUI features many different boards: academics, activities, civic engagement, student issues, Idaho Commons and Union Facilities, ASUI productions, athletics, natural resources and conservation, and the Student Recreation Center. Opportunities are also available for student appointment to university-wide committees. ASUI offices are located in the Idaho Student Union Building in the Student Activities and Leadership Programs Office in Room 302 and can be contacted at 208-885-633. For more information, visit www.uidaho.edu/studentaffairs/department-of-student-involvement/asui (<https://www.uidaho.edu/studentaffairs/department-of-student-involvement/asui/>).

Civic Education Project and Volunteer Programs are dedicated to providing students with opportunities to serve the community while developing group leadership skills and a better understanding of citizenship. The program coordinates several one-day service projects with the community including 'Make a Difference Day' and 'Saturday of Service' (Youth Service Day). The program also keeps an ongoing catalog of service and volunteer positions available to students and student organizations. Some University classes offer credit for service commitments, and the program assists in connecting these students to community service projects. The program promotes the belief that young people can greatly impact our communities and future through community service and by building a lifelong ethic of civic engagement. In addition, the program offers national community service-based scholarship programs—such as the Bonner Service Leaders for students—and administers these programs in the community. For more information on volunteering, contact the Student Activities and Leadership Programs Office in the Idaho Student Union Building (Room 302) or call 208-885-6331.

Enrollment Services, located in the Pitman Center, is the headquarters for the Undergraduate Admissions, Registrar's Office, Student Accounts, and Office of Undergraduate Recruitment. Branch offices of Parking and Housing are located near the Information Desk. The Financial Aid office and the UI Bookstore are also nearby. Tours of the campus originate from the Office of Undergraduate Recruitment on the main floor. For information on activities and services, call 208-885-INFO or 208-885-4636.

The **Graduate Student Association (GSA)** supports and promotes graduate student education and graduate student life at the University of Idaho. This includes creating programs and assisting graduate students during their transition from student life to professional life. GSA elections are held annually as a commitment to providing a collective voice for graduate students to the university and to the state. The GSA office is located in the Idaho Student Union Building Room 305, just off the Overlook Lounge. GSA can be reached at 208-885-9446 or gsa@uidaho.edu.

The **Idaho Student Union Building (ISUB)** is the center of campus life and provides programs, amenities, and services to enhance the educational experience of UI students, their families, and guests. Located at the heart of campus, the ISUB serves as the crossroads and meeting place for the University of Idaho. Services offered at the ISUB include meeting rooms for nonacademic programs, a variety of student support services, a food court, coffee shop, convenience store, copy service, credit union, ATMs, lounges, and administrative offices. Through various programs and services, the ISUB cultivates and enhances the living and learning experience of students. Our students enjoy the many aspects of the building itself while gathering with friends to study, learn, and socialize with each other in a comfortable atmosphere. Cultural enrichment programs such as art exhibits, music, and speaker presentations are available to students, other members of the university community, and area residents. For information on the Idaho Student Union Building's activities, call 208-885-CMNS (2667) or 208-885-2233.

Leadership Development starts from the moment students enroll at the University of Idaho. An annual fall leadership retreat promotes student development and growth through campus involvement. Students can stay involved throughout the year through leadership training seminars, student organizations, and meetings between student leaders and university administrators. Students can also participate in the Group Opportunities and Leadership (GOAL) program, which stretches both mind and body. Through activities such as ropes courses and team initiatives, students will develop knowledge of leadership styles, conflict resolution, communication skills, and problem solving. For more information about leadership development, contact the Student Activities and Leadership Programs Office in the Idaho Student Union Building (Room 302) or call 208-885-6331.

Looking for an adventure experience? **Outdoor Programs** offers classes and informal instruction in some of today's top outdoor activities: kayaking, rafting, rock climbing, mountaineering, skiing, and other winter sports. Take advantage of the Outdoor Programs Resource Center and Climbing Center, which includes 6000 square feet of climbing surface and a 55-foot pinnacle. Want to experience the great outdoors, but lack the gear? The Outdoor Rental Center has the most extensive inventory of quality outdoor equipment in the Northwest. From rafts, kayaks, and canoes to skis, climbing gear, and camping equipment, the Outdoor Rental Center is ready to serve students and the Moscow community with their outdoor needs. The Outdoor Program, the Outdoor Rental Center, and the Climbing Center are located in the Student Recreation Center (SRC). For information, call the Outdoor Program 208-885-6810 or Rental Center 208-885-6170 or visit www.uidaho.edu/studentaffairs/campus-recreation/outdoor-programs (<http://www.uidaho.edu/studentaffairs/campus-recreation/outdoor-programs/>).

Recreational facilities located on the Moscow campus include the new Student Recreation Center with approximately 85,000 square feet devoted to student health and recreation. In it are a climbing wall with a 55-foot pinnacle (the highest of any university), fitness equipment, an indoor jogging track, two full-size gyms, a multi-purpose court, two multi-purpose/aerobic rooms, locker rooms, and a social lounge. Additional recreation facilities include the ASUI Kibbie Activity Center, the Swim Center, an 18-hole golf course, and indoor and outdoor tennis and handball courts.

Sound, Production, and Lighting Services (SPL) offers training and experiential opportunities for student employees. SPL provides professional sound, lighting, and multimedia production for student-sponsored performance and entertainment events. Employment opportunities exist for technicians to work with sound, lights, and film.

Other employment is also available to students interested in computer and network support. SPL is located on the 3rd floor of the Pitman Center or can be contacted at 208-885-6947.

In **Student Media**, students utilize real-world technology in the various productions of the student newspaper, yearbook, FM radio, and advertising. *Argonaut*, the twice-weekly student newspaper, gives students the chance to gain real-world experience in media writing, computer graphics, photography, advertising, marketing, and business management. Editors, paginators, reporters, and advertising representatives have the opportunity to work with the newest technological equipment to create a product comparable to many commercial newspapers. The *Gem of the Mountains* yearbook is about much more than putting out an annual. The most important commitment of the GEM staff has been their continued dedication toward preserving the UI legacy for students and alumni. KUOI-89.3 FM, the student-run campus radio station, provides a free-form alternative to other media in the Moscow-Pullman area. Students have the opportunity to serve as on-air announcers, music and programming directors, and station manager. All student media organizations are housed on the 3rd floor of the Pitman Center and can be contacted at 208-885-7825.

Variety is the spice of life, and there is no better place to find your niche than with the variety of **Student Organizations** available at the University of Idaho. With more than 150 campus-wide organizations, sports clubs, and Greek chapters, students have many choices when it comes to customizing involvement. Catch a glimpse of the options available on campus by attending the Student Involvement Fair and browsing the Student Organization Guide to Involvement. Not only is it easy to find a student organization, it is just as simple to start your own. Through resources in the Student Activities Office, new organizations can gain recognition, build membership, and apply for funding from the ASUI Activities Board. For more information, contact the Student Activities and Leadership Programs Office, located in the Idaho Student Union Building (Room 302), or call 208-885-6331.

The **Bruce Pitman Center**, located at Sixth and Deakin Streets, is home to the Enrollment Services including the Registrar's Office, Admissions Office, Office of Undergraduate Recruitment, Student Accounts/Cashiers, and Student Financial Aid; Off-Campus Student Employment; Student Media; Sound, Production, and Lighting; International Ballroom; Borah Theater; Center for Disability Access and Resources; and several meeting rooms. Services offered in the Pitman Center include student computer labs, a video center, catering services, an ATM, and lounges. For more information, call 208-885-4636.

Religious Activities

The university is served by three campus religious centers: Campus Christian Center (corner of University and Elm); LDS Institute of Religion (902 Deakin); and St. Augustine's Roman Catholic Center (corner of Sixth and Deakin). These centers provide opportunities for the study and practice of religion as well as resources in counseling and guidance. In addition, all of Moscow's churches provide opportunities for religious development for University of Idaho students.

Community Standards

Conduct & Community Standards

To support the core values and mission of the University of Idaho, the staff within Conduct & Community Standards strives to uphold a balance of student accountability with education and growth in regard to the

Student Code of Conduct. If you need assistance with the Student Code of Conduct, please contact the Office of the Dean of Students at 208-885-6757.

Student Rights, Conduct, and Records

The "Statement of Student Rights," "Student Code of Conduct," and "Student Records Policy" are published in the *Faculty-Staff Handbook* and in the booklet entitled "Policies and Information of Interest to Students." The booklet is available from the Office of the Dean of Students (TLC 232), the Office of Academic Affairs (Admin 104), and other locations around campus. Members of the university community are urged to familiarize themselves with these documents.

Preferred Name

The University of Idaho recognizes that some individuals prefer to identify themselves with a preferred name in addition to the person's legal name. For this reason, beginning in the Spring 2021 semester, the University has enabled students to use a "preferred name" where possible in the course of University business and education. However, the University reserves the right to remove a preferred name if it contains inappropriate or offensive language or is being used for misrepresentation. Students who misuse the preferred name may be referred to the Dean of Students.

Fees, Expenses, and Aid

The rates and procedures in this section are subject to change without notice.

The Board of Regents of the University of Idaho approves rate changes each April. For the most current rate information, go to www.uidaho.edu/current-students/student-accounts (<http://www.uidaho.edu/current-students/student-accounts/>).

Students are encouraged to register early for classes at the University of Idaho. Information about the registration process is available from the Registrar's Office at www.uidaho.edu/registrar (<http://www.uidaho.edu/registrar/>) or 208-885-6731. Information regarding fees is available from the Student Accounts Office at www.uidaho.edu/current-students/student-accounts (<http://www.uidaho.edu/current-students/student-accounts/>) or 208-885-7447.

Student Accounts and Cashiers

Bruce Pitman Center; 208-885-7447; acctrec@uidaho.edu; www.uidaho.edu/current-students/student-accounts

The Student Accounts Office coordinates charges and billing for student's accounts including tuition and fee charges; room, meals, and family housing charges; student health center, library over dues, and parking tickets; and other miscellaneous charges. The office also collects payments, administers payment plans, distributes financial aid refunds, and assists students who have a third-party sponsor.

Billing and Payment Information

Students are billed via e-mail in July for fall semester and billed via e-mail in January for spring semester. Students are also billed via e-mail monthly throughout the semester for unpaid balances. All semester fees and tuition are due on or before the first day of each semester. Charges incurred over the course of the semester are considered due in full within 10 days of the posting date. The University of Idaho does not drop courses for nonpayment. Students are responsible for dropping courses prior to the first day of the term to avoid being billed. Deadlines for dropping classes are posted each academic term on the Registrar's website. Failure to drop classes before the final deadline may affect refund status and grading. Accounts with balances due greater than \$500 will be blocked from adding/dropping/registration. Transcripts will not be released for students owing the university. Federal loan and grant regulations do not permit using federal financial aid to pay a balance from a prior aid year. Students may access their account information on Vandal Web at www.vandalweb.uidaho.edu (<https://www.vandalweb.uidaho.edu/>). Failure to receive a bill does not relieve students from payment responsibilities.

Credit card payments for student fees, tuition, and room and board are not accepted at the cashier's window; these payments need to be made online through Vandal Web. A 2.75% service fee is assessed on credit cards payments of student fees, tuition, and room and board. The fee will not apply to incidental charges, like parking tickets, health center charges, etc. that are paid by credit card at the cashier's window. The University's web check application allows customers to pay online directly from a bank account and is not subject to the 2.75% service fee.

The Family Educational Rights and Privacy Act of 1974, as amended, also known as the Buckley Amendment, is a federal law that governs the confidentiality of student records. Generally, the law requires that educational institutions maintain the confidentiality of what are termed

"education records," ensures that each student has access to their education records, and provides students with a limited opportunity to correct erroneous education records. This means that the University cannot release student records (grades, account information, class schedule, student ID, etc) to anyone other than the student without written consent from the student. A Consent to Release Information form is available for the student to complete and return to the University at www.uidaho.edu/current-students/student-accounts/forms-and-downloads (<https://www.uidaho.edu/current-students/student-accounts/forms-and-downloads/>).

E-mail Usage and On-line Account Access

UI's official e-mail policy states, "A University assigned student e-mail account shall be the University's official means of e-mail communication with any student required to have a UI e-mail account. Students are responsible for all information sent to them via their University assigned e-mail account." Accordingly, the Student Accounts Office will use the official UI e-mail address to communicate with students. We send interim billing notices and other information using e-mail only, and it is essential that all students regularly check their UI e-mail accounts. Student Account information is available on Vandal Web under the Student Tab, then Student Accounts, then Student Accounts Center. If parents or other individuals need access to student billing information, the student is responsible for granting them access to the information.

Student Financial Aid Services

Bruce Pitman Center; 208-885-6312; finaid@uidaho.edu; www.uidaho.edu/financial-aid (<https://www.uidaho.edu/financialaid/>)

The office of Student Financial Aid Services assists students and their parents who apply for financial assistance in the form of scholarships, grants, loans, and part-time work to help pay the cost of attending college. These programs may include scholarships, Federal Pell Grants, Federal Supplemental Educational Opportunity Grants (FSEOG), Federal or Idaho State Work Study Programs (FWS or IWS), Federal Direct Loans, Federal Direct Graduate PLUS, and Federal Direct Parent Loans to Undergraduate Students (PLUS). Financial aid is expected to supplement student and family resources. The office also assists students in finding part-time jobs off campus.

Priority Dates

Because funds are limited, to receive priority consideration for all available funds, student applicants must submit the Free Application for Federal Student Aid (FAFSA) to the federal processor by the priority date each year. This priority date applies to incoming and continuing students and students starting both fall and spring semesters. The link to the FAFSA page can be found on the Financial Aid homepage (<https://www.uidaho.edu/financial-aid> (<https://www.uidaho.edu/financialaid/>)). In addition to the FAFSA, students who are new to the university must also have a complete application for admission on file by the priority date. Students who meet both priority dates will receive first consideration for funds for which they qualify. Students who do not meet both priority dates will still be considered for the guaranteed scholarship programs, Federal Pell Grants, and Federal Direct Loans, which are available throughout the year.

Enrollment

Financial aid during the academic year is usually awarded in expectation of full-time enrollment: 12 credits per semester for undergraduate students, 10 credits per semester for law students, and 9 credits per semester for graduate students. If a student is receiving aid as a full-

time student, they must be registered as a full-time student to receive the aid on the first day of class. Students are required to enroll full-time to receive scholarships, unless the donor specifies special circumstances allowing part-time enrollment. All students must enroll at least half-time (6 credits per semester for undergraduate students or 5 credits per semester for graduate and law students) to be eligible for Direct Loans. Students must be enrolled in the required number of credits through the 10th day of classes (census date) of the semester to continue receiving financial aid and scholarships for the semester.

For federal loan eligibility determinations, the following enrollment classifications will be used: Undergraduate enrollment will be 6-8 credits for half-time, 9-11 credits for three quarter time, and 12 or more credits for full time; Graduate enrollment will be 5-6 credits for half time, 7-8 credits for three quarter time, and 9 or more credits for full time; and Law enrollment will be 5-6 credits for half time, 7-9 credits for three quarter time, and 10 or more credits for full time.

Work Study

Students who are awarded Federal Work Study or Idaho State Work Study must earn their award amount through offered part-time employment. Students must indicate their interest in the Work Study program on the FAFSA. Awards based on financial need and available funds are made to students who meet the priority dates.

Direct Loans

The University of Idaho participates in the Federal Direct Loan Program. Loan funds are provided to the student directly from the U.S. Department of Education through the University of Idaho rather than coming from a bank or lender. Students who accept these loans are asked to sign a Master Promissory Note (MPN) and complete Entrance Counseling. Students only need to sign an MPN and complete Entrance Counseling once every 10 years. Once the signed MPN and Entrance Counseling are received, the funds will be credited to the student's account.

Eligible Programs

Students who have one or more bachelor's degrees or are working toward an additional undergraduate degree or a teaching certificate and are not yet admitted to graduate school are considered to be second degree-seeking undergraduates and are not eligible for federal grant programs (Pell and FSEOG). They are restricted to undergraduate borrowing limits for loan programs. Graduate students and students in the College of Law are eligible to apply for Direct Unsubsidized and Graduate PLUS Loans. Non-degree-seeking and certificate only students (those not enrolled in a degree program) are not eligible for any type of federal financial aid. Correspondence classes are not included in the determination of enrollment status.

Satisfactory Academic Progress

Students at the University of Idaho must maintain Satisfactory Academic Progress (SAP) to receive federal student financial aid. To meet SAP requirements, a student must maintain a minimum cumulative GPA, complete a certain percentage of attempted credits, and complete a degree program before exceeding 150% of required credits.

The requirements to maintain Satisfactory Academic Progress differ based on whether the student is in an undergraduate, graduate, or law degree program. The requirements can be found at www.uidaho.edu/financial-aid/keep-your-aid (<https://www.uidaho.edu/financialaid/applyingforaid/keepingyourfinancialaid/keepingyouraid/>).

At a minimum, SAP will be reviewed at the end of each spring semester. Students not meeting the stated minimum requirements of SAP are no longer eligible to receive assistance under Title IV Higher Education Act (HEA) programs. For purposes of evaluating satisfactory academic progress, the academic year is defined as summer, fall, and spring. Therefore, the summer performance prior to fall and spring will be included in the review. Students receiving financial aid for the first time are considered to be in good academic standing until they reach the defined annual evaluation time for SAP. It should be noted the eligibility criteria for financial aid differ from those for academic eligibility contained in regulation L-6 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/l-academic-standing-probation-disqualification-reinstatement/>).

Undergraduate students wishing to appeal a suspension of financial aid should complete a Petition for Financial Aid Reinstatement Form and contact the Dean's Office in the college in which they are enrolled. Graduate students should complete a Petition for Financial Aid Reinstatement and contact the College of Graduate Studies, and law students should contact the College of Law. Any special circumstances concerning the student's academic progress for student financial aid will be reviewed on an individual basis. The Director of Student Financial Aid Services may reinstate a student based on special circumstances unique to that student.

Upon receiving a completed Petition for Financial Aid Reinstatement Form from the student, the student's academic dean (or designee) may recommend a waiver of satisfactory academic progress criteria due to special circumstances detailed on the petition form. If the petition is denied, the Director of Student Financial Aid Services will review the recommendation and make the final determination of whether to waive the suspension for the student. The decision of the academic college and the Director of Student Financial Aid Services may be appealed to the Student Financial Aid Committee, and their decision may be appealed to the Administrative Hearing Board.

If the petition is granted, the suspension will be waived for one term and all federal financial aid/eligibility will be reinstated unless the Academic Plan section of the Petition for Financial Aid Reinstatement form has been completed to encompass multiple terms.

Scholarships

Students who wish to apply ONLY for scholarships not based on financial need must do one of the following to receive consideration:

1. Students who are attending the university for the first time need to have a complete application for admission, including all transcripts and required test scores (freshmen), on file by the priority date.
2. Students who are enrolled at the university during the prior spring semester in at least 9 credits for undergraduate students, 10 credits for law students, or 6 credits for graduate students are automatically considered (without completing any additional forms) for scholarships not based on financial need.
3. Students who are enrolled at the university for the prior spring semester but in less than 9 credits for undergraduate students, 10 credits for law students, or 6 credits for graduate students will need to notify the Associate Director for Scholarships in Student Financial Aid Services by the priority date of their interest in scholarships not based on financial need.
4. Students who previously attended the university but were not enrolled during the prior spring semester must notify the Associate Director

for Scholarships in the Office of Student Financial Aid Services of their intent to enroll by the priority date.

Athletic Scholarship Appeal

Students who have had their athletic scholarship aid reduced or eliminated may appeal the loss of funds by submitting an appeal in writing to the chair of the Student Financial Aid Committee.

Financial aid policies and procedures are subject to change without notice to ensure compliance with federal, state and university regulations. The Office of Student Financial Aid Services may be contacted for current information (208-885-6312). Additional information is available at the Financial Aid website (www.uidaho.edu/financial-aid) (<https://www.uidaho.edu/financialaid/>).

Annual Expenses

Estimated annual expenses include the cost of undergraduate student fees, nonresident tuition (if applicable), graduate/law/architecture fees (if applicable), room and board, books, and miscellaneous costs (clothing, laundry, transportation, incidentals, social/recreational expenses, fraternal affiliations, and personal needs). For an estimated cost of attendance, see the Financial Aid website (www.uidaho.edu/financialaid) (<http://www.uidaho.edu/financialaid/>).

Students can choose to pay fees in installments. Payment information is shown in the "Deferred Payment of Fees" section further below. The university accepts cash, personal checks, bank drafts, money orders, travelers' checks, Discover, VISA, and MasterCard.

Full/Part-Time Registration Fees

See the Student Accounts website, www.uidaho.edu/current-students/student-accounts (<http://www.uidaho.edu/current-students/student-accounts/>), for all current fee rates.

Architecture Dedicated Fee

The State Board of Education granted approval to charge a professional fee to all College of Art & Architecture students on a semester basis over and above general tuition and fees. The fee is levied in addition to undergraduate student fees and nonresident tuition (if applicable). The professional fee is used to directly support technology and computing for students and faculty, supplement budgets, hire temporary faculty, support the college's visual and design resource centers, cover professional accreditation costs, and partially support student field trips, guest lecturers, and student organizations. Undergraduate students carrying 10 or more credits or graduate students carrying 9 or more credits pay the full-time professional fee. Undergraduate students carrying 9 credits or less or graduate students carrying 8 credits or less pay the part-time professional fee.

Graduate Tuition Fee

Graduate students pay this fee in addition to the undergraduate fee and nonresident tuition (if applicable). Students carrying nine or more credits will pay the full-time graduate tuition fee; students carrying eight credits or less pay the part-time graduate tuition fee.

Law Fee

Law students pay the graduate tuition fee and the law fee in addition to the undergraduate student fee and nonresident tuition (if applicable).

Students carrying nine or more credits will pay the full-time law fee; students carrying eight credits or less pay the part-time law fee.

Undergraduate Student Fee

Unless exempted, all undergraduate students carrying 10 or more credits, all graduate students carrying 9 or more credits, and all research/instructional assistants (including faculty-staff spouses) on full appointment pay the full-time undergraduate student fees. Undergraduate students carrying nine credits or less and graduate students carrying 8 or less credits pay the part-time undergraduate student fees. Undergraduate and non-degree students enrolling in graduate courses must also pay the appropriate graduate tuition fee for graduate level courses. In addition, students in certain divisions may need to pay special fees (see "Special Fees" below).

Payment of full-time fees covers most laboratory and course charges and entitles the student to membership in the Associated Students University of Idaho (ASUI), to a nontransferable student identification card, to the services of the Alumni Office, and to the other services and facilities maintained by the university for the benefit of the students, subject to charges for special services and the payment of the special fees listed below. No reduction in fees can be made for students who may not want to use any part of these services.

WUE Fee

The Western Undergraduate Exchange Program fee is equal to 50 percent of the institution's full-time undergraduate student fee. This fee is in addition to the undergraduate student fees. Nonresident tuition is not assessed to WUE students.

Nonresident Tuition Fee

Students who are classified as nonresidents of the state of Idaho pay this fee in addition to the regular student tuition and fees. Undergraduate students carrying ten or more credits and graduate students carrying nine or more credits will pay the full-time nonresident tuition fee. Undergraduate students carrying nine credits or less and graduate students carrying eight credits or less pay the part-time nonresident tuition fee. For tuition purposes, a student may be classified as an Idaho resident; see the Registrar's Office website, www.uidaho.edu/registration/residency/, for more information. Students currently enrolled at UI may obtain information and interpretation of the residency regulations from the Registrar's Office. Students who have not yet enrolled may contact the Admissions Office.

Special Fees

Drop Fee (\$5)

This fee is charged for each course dropped with a 'W' after the tenth day of the semester, excluding full semester withdrawals.

Admission Application Fee

For information concerning the application fee, see the section headed Application Procedures (<https://catalog.uidaho.edu/student-services/admission/>).

Audit Fee

Students who audit a course pay this fee in addition to any special course fees unless the student has already paid full-time student fees for that term. This fee is equivalent to the part-time fee. See the Student

Accounts website, www.uidaho.edu/current-students/student-accounts (<http://www.uidaho.edu/current-students/student-accounts/>), for current fee rates.

Graduation Fee (\$25)

This fee is payable at the time the student applies for each degree to be awarded by the university. An additional late service charge of \$35 is charged for each application filed after the date listed in the registration calendar.

Extramural Credit Application Fee (\$35) and Extramural Credit Fee (\$75 per course granted)

Students seeking extramural credits earned under regulation I-2 must pay the application fee at the time of application. The per-course fee is charged to the student's account at the time the credit is granted.

Lab and Course Fees

Special fees are charged for certain courses. Examples include the College of Letters, Arts and Social Sciences charging a general shop fee and the Movement Sciences department charging special fees for physical education courses. Special Course fees are noted in the Comment section for each course in the online Class Schedule (<https://webpages.uidaho.edu/schedule/>).

Late Payment Fee (\$100)

Students who pay after the tenth day of classes must pay the \$100 Late Payment Fee. Students who have not paid by the last day of the month in September, October, or November for Fall and February, March, or April for Spring will be charged an additional \$100 Late Payment Fee for each month the balance is not paid in full unless enrolled in an approved payment plan.

Music Special Fees

All students who enroll in individual instruction pay a course fee. Additionally, fees are charged for some required courses within the music major curriculum. For current fees, consult the School of Music (208-885-6231) or see the online Class Schedule (<https://webpages.uidaho.edu/schedule/>).

Petition Fee (\$10)

This fee is charged for each petition submitted to the Academic Petitions Committee or Graduate Council.

Registration Fee for Employee Dependents

Under the Employee Dependent Education Tuition & Fee Waiver Program (FSH 3780 (<https://www.webpages.uidaho.edu/fsh/3780.htm>)), enrollment in the University for reduced fees (50% reduction of in-state tuition and fees) is extended to the dependents (as defined by the Federal Income tax code, Sect. 152) of board-appointed UI employees on regular appointment who work at least half-time, including those on official leave. The Employee Dependent Tuition & Fee Waiver Program is a qualified tuition reduction plan under Sect. 117 of the Internal Revenue Code. Under this program, fees waived for enrollment in undergraduate courses are exempt from federal, state, and social security taxes. Reduced fees for graduate level courses (500 and above) are subject to tax; the tax is payable by the employee, and deductions are made from the employee's paycheck by semester. Provisions of federal or state law may,

however, change at any time. Please consult your personal tax advisor for implications to your individual situation.

Registration Fee for Senior Scholars

Idaho residents 60 years of age and older are permitted to enroll in courses on a space-available basis. The fee is \$20 plus \$5 per credit. Senior scholars are enrolled after the regular registration days. In addition to this fee, special course fees for specific courses are assessed (see Lab and Course Fees). Registration under this program entitles the student to instruction and library privileges only. It does not include insurance, student health services, ASUI membership, Recreation Center privileges, or free admission to athletic events. Seniors who are graduate or instructional assistants may not use the Senior Scholar waiver.

Registration Fee for Staff

Under the Employee Educational Assistance Program (FSH 3740 (<https://www.webpages.uidaho.edu/fsh/3740.html>) and FSH 3760 (<https://www.webpages.uidaho.edu/fsh/3760.html>)), board-appointed UI employees on regular appointment who work at least half time (including those on official leave) may enroll in the university at the reduced rate of \$20 registration fee plus \$5 per credit. Special Lab and Course Fees must be paid by employee. Reduced fees are not eligible for refunds. The Educational Fee and Tuition Reduction Program is a qualified tuition reduction plan under Section 117 of the Internal Revenue Code for undergraduate courses. Under this program, waivers for undergraduate fees are exempt from federal and state employment taxes. For graduate courses, the program qualifies as an Educational Assistance Program under Section 127. Under this program, fee waivers for graduate courses, 500 level and above, are exempt from employment taxes up to an annual amount of \$5250.00. The tax is payable by the employee and deductions are made from the employee's paycheck by semester.

Registration Fee for Staff Spouse

Under the Educational Fee and Tuition Reduction Program, enrollment in the University for reduced fees (\$20 registration fee plus \$5 per credit) is extended to the spouses of board-appointed UI employees on regular appointment who work at least half-time (including those on official leave). The Educational Fee and Tuition Reduction Program is a qualified tuition reduction plan under Section 117 of the Internal Revenue Code. Under this program, fees waived for enrollment in undergraduate courses are exempt from federal, state, and social security taxes; fees waived for graduate level courses (above 500) are subject to tax; tax is payable by the employee. Provisions of federal or state law may, however, change at any time. Reduced fees are not eligible for refunds.

Student Health Service Fees

Student Health Services provides a broad spectrum of outpatient medical care services. Please visit the Student Health Services website, www.uidaho.edu/studenthealth (<https://www.uidaho.edu/studenthealth/>), for hours of operation, health insurance plans, scope of services, and fees for services. Student health insurance fees are also available on the Student Accounts website, www.uidaho.edu/current-students/student-accounts (<http://www.uidaho.edu/current-students/student-accounts/>).

Transcript Fee (\$12.50)

Official transcripts may be ordered at a cost of \$12.50 per copy. For instructions on ordering transcripts, see the Registrar's website, www.uidaho.edu/registrar/ (<http://www.uidaho.edu/registrar/>).

WWAMI Fee

First-year students who enroll in the WWAMI Medical Education Program pay this fee in addition to the undergraduate student fee. For the current WWAMI fee, contact the Student Accounts Office (208-885-7447).

Deferred Payment of Fees

The University of Idaho offers payment plans to students. Fees, tuition, on-campus housing, meal plans, and SHIP charges are eligible to be included in a payment plan. Payment plans require an enrollment fee at the time the plan begins. Please contact Student Accounts for additional information at 208-885-7447 or go to www.uidaho.edu/current-students/student-accounts (<http://www.uidaho.edu/current-students/student-accounts/>).

Refund of Fees

Regular Withdrawals

Students who withdraw in accordance with the regulations governing withdrawals are entitled to the following refund of tuition and fees. Refunds are calculated on total fees and tuition charged. Refunds are based on the official date of withdrawal, which is considered to be the date the student begins the withdrawal process. Reduced fees paid by individuals using the employee/employee spouse educational benefit, the Senior Scholars benefit, or the employee dependent waiver benefit are not eligible for refunds. Special lab and course fees are non-refundable after the second week of class unless otherwise specified by the department charging the fee. All requests for refund of fees must be formally initiated in the semester in which the fees (charges) were incurred. Applicable federal Title IV financial aid funds will be returned to the Department of Education based on statutory regulations.

1. When the official date of withdrawal is prior to or on the first day of classes, 100 percent of fee and tuition charges are refunded.
2. When the official date of withdrawal is after the first day of classes but before the close of the second week of classes, 100 percent of fee and tuition charges are refunded.
3. When the official date of withdrawal is after the close of the second week of classes, no refund is given.

Financial Credit Policy for Hardship Withdrawals

In instances of hardship withdrawals, to encourage students to continue pursuing their education, the University issues financial credits based on the chart below, subject to the following terms:

1. Financial credits are calculated based on the total tuition and fees charged.
2. Financial credits are based on the effective date of the hardship withdrawal, as determined by the authorized University official or committee.
3. Financial credits may be used only by the student who was issued such credit. It is not transferable or assignable to others.
4. Reduced fees arrangements, including, but not limited to, any reduced fees paid by individuals using the employee educational benefit, the employee spouse educational benefit, the employee dependent waiver benefit, the senior citizen waiver benefit, or any other institutional waivers, are not eligible for financial credits.
5. Special lab and course fees are non-refundable after the second week of the semester unless otherwise specified by the department charging the fee, and they are also not eligible for financial credits.

6. Applicable federal Title IV financial aid funds will be returned to the Department of Education based on statutory regulations. UI policies and protocols regarding scholarships and institutional aid will also apply. Any financial credit received under this policy shall be automatically applied first to pay any debt owed by the student.
 - a. When the results of the return of Title IV financial aid funds create an owing balance on the account, any financial credit will be automatically applied to the owing balance on the account. If there is still an owing balance after the financial credit is applied, the student will be billed, and the owing balance will be due within ten days of the billing date.
 - b. When the results of the return of Title IV financial aid funds and scholarships create a credit balance on the account, the student will not be issued a refund, but rather a financial credit will be placed in a holding account to be used by the student to pay tuition and fees in future semesters. Once the student is registered and charged tuition and fees for a future semester, the student is responsible for requesting that Student Accounts apply the financial credit to pay tuition and fees posted on the student's account.
7. Any financial credit received under this policy will be valid for the following six semesters (with the summer counting as one semester). For example, if financial credit is received for the Spring 2023 semester, such financial credit must be used by the Spring 2025 semester.
 - a. Students who are unable, for hardship reasons, to use the financial credit before it expires, may petition to request an extension of the expiration date using the appeal process described below.
8. Students may appeal the refund of fees for Hardship Withdrawals. Appeals must be submitted to the Vice President for Finance and Administration (VPFA) or designee using the process outlined below. Students must provide the following criteria to support their appeal with sufficient documentation:
 - a. Student appeals under this policy are limited to:
 - i. Mistakes by the University in applying this policy.
 - ii. Requests for extension of financial credit expiration date.
 - iii. Exceptional circumstances.
 - b. To engage in the appeal process, visit here (<https://www.uidaho.edu/current-students/student-accounts/tuition-and-fees-late-fees-refunds/tuition-and-fee-refunds/medical-withdrawals/>).
9. Any time before the financial credit expires, a student who received a financial credit under this policy may elect to receive 50% of amount of financial credit in the form of a refund. To do so, students must fill out the Hardship Withdrawal Refund Election Form (<https://www.uidaho.edu/current-students/student-accounts/tuition-and-fees-late-fees-refunds/tuition-and-fee-refunds/medical-withdrawals/>) and provide it to Student Accounts before the financial credit expires. This election is final and cannot be reversed.

Hardship Withdrawal Fall & Spring Deadlines/Refunds Percentages

Approved hardship withdrawal applications will be subject to the financial credit terms below.

1. Any withdrawal during the first ten days of the semester is treated as a regular withdrawal and is subject to the Tuition and Fee Refund Policy.

2. When the effective date falls after the first ten days and within week 3 and week 4 of the semester, 75% of tuition and fees charged is credited.
3. When the effective date falls within week 5 through week 8 of the semester, 50% of tuition and fees charged is credited.
4. When the effective date falls within week 9 through week 12 of the semester, 25% of tuition and fees charged is credited.
5. When the effective date falls within week 13 and week 14 of the semester, 10% of tuition and fees charged is credited.
6. When the effective date falls within week 15 and week 16 of the semester, 0% of tuition and fees charged is credited.

Hardship Withdrawal Summer Deadlines/Refund Percentages

Approved hardship withdrawal applications will be subject to the financial credit terms below. Any withdrawal during the first three days of the semester is treated as a regular withdrawal and is subject to the Tuition and Fee Refund Policy.

1. When the effective date falls after the first three days and within a week that corresponds to 25% or less of the term for that course, 75% of tuition and fees charged is credited.
2. When the effective date falls within a week that corresponds to 25.1% to 50% of the term for that course, 50% of tuition and fees charged is credited.
3. When the effective date falls within a week that corresponds to 50.1% to 75% of the term for that course, 25% of tuition and fees charged is credited.
4. When the effective date falls within a week that corresponds to 75.1% to 87.5% of the term for that course, 10% of tuition and fees charged is credited.
5. When the effective date falls within a week that corresponds to 87.51% or more of the term for that course, 0% of tuition and fees charged is credited.

Human Resources, Student, and Temporary Hiring

415 W. 6th St; 208-885-3609; employment@uidaho.edu; www.uidaho.edu/human-resources

Human Resources assists students in gaining employment experience to supplement financial support. Office hours are Monday through Friday from 8:00 a.m. to 5:00 p.m. Hiring departments across campus post available positions through the Human Resources office. All University of Idaho students are eligible to apply for positions listed on the Human Resources website. Job vacancies, applications, and additional information are available online at www.uidaho.edu/human-resources (<http://www.uidaho.edu/human-resources/>). All employment and payroll forms for students are completed at the Human Resources office.

Off-Campus Employment

Job Location and Development (JLD) works with the local business community to develop off-campus part-time, full-time, and summer jobs for students. The JLD office is located on the first floor of the Pitman Center in the Student Financial Aid Office. JLD services are available to all students. For more information, call 208-885-2778 or visit www.uidaho.edu/financialaid (<https://www.uidaho.edu/financialaid/>).

In addition, the Idaho Department of Labor (<https://labor.idaho.gov/dnn/idl/JobSeekers.aspx>), located at 1350 Troy Highway behind the Eastside Marketplace in Moscow, is a free service and lists jobs in the community. The classified sections of the Moscow/Pullman Daily News (<https://dnews.com/>) and the campus paper, The Argonaut (<https://www.uiargonaut.com/>), also carry job listings.

Veterans' Benefits for Educational Assistance

The Military and Veterans Services Office assists veterans, dependents, reservists, and national guardsmen who are eligible for educational benefits through the Veterans Administration. Students expecting to receive veterans' benefits must apply for benefits and should contact the Military and Veterans Services Office at least six weeks before the beginning of each semester.

To qualify for payments, all veterans must be released under honorable conditions. To receive full benefits, a veteran must be pursuing an approved course of study leading to a degree or other professional objective. To be considered full time, undergraduate students must carry 12 credits or the equivalent and graduate students must carry 9 credits or the equivalent (see regulation O-1 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/>)).

For guidance on veterans benefits, please contact the Military and Veterans Services Office located at 901 Paradise Creek Street, LLC Building #3, Moscow, ID 83844, by phone at 208-885-7989, or through email at veterans@uidaho.edu.

Housing and Residence Life

Housing and Residence Life at the University of Idaho offers on-campus residence hall and apartment living options for students at all levels. Please visit the Housing & Residence Life website (<http://www.uidaho.edu/housing/>) for more information.

Residence Halls

Housing & Residence Life offers a variety of living communities for first-year through upper-level students. With four residence halls to choose from and over 1,800 students living on campus, students will experience an opportunity of a lifetime. Please visit the Housing & Residence Life website (<http://www.uidaho.edu/housing/>) for a complete list of options and instructions on how to apply.

The University of Idaho has a first-year student live on requirement. For information on this policy please visit the Dean of Students website (<https://www.uidaho.edu/student-life/live-on-campus/live-on-requirement/>) or contact 208-885-6757.

Living and Learning Communities

The Living and Learning Communities (LLC) are designed for upper division students who want a hybrid of a residence hall and an apartment. The buildings include a full kitchen, community living rooms, dining rooms, dens with a fireplace, and study areas where students can relax or form instant study groups. The suite layout of the rooms houses two to five people per suite. The suite offers a common living area with a small kitchenette with sink, refrigerator and microwave, a shared bathroom and single, double, super double or super single rooms. Some unique themed communities in the Residence Halls and the LLC include the following:

Graduate Student Housing

Housing & Residence Life offers a variety of living communities for graduate students. With three residence halls and three apartment communities to choose from, graduate students can live conveniently on the University of Idaho campus. Please visit the Housing & Residence Life website (<http://www.uidaho.edu/housing/>) for a complete list of options and instructions on how to apply.

Apartment Housing

For married students, students with children, graduate students, and students over 25 years old, the university offers affordable housing options that support your academic needs. For more detailed information about living in University apartments, visit the Housing website at www.uidaho.edu/housing (<http://www.uidaho.edu/housing/>).

Elmwood

University Housing offers our Elmwood apartments to full-time students who are 19 years of age or older. Please visit the University Housing website at www.uidaho.edu/universityhousing (<http://www.uidaho.edu/universityhousing/>) for further information.

Off-Campus Living

Moscow offers a variety of off-campus housing options. Information sources for off-campus housing include:

1. the Off-Campus Housing List, published weekly by ASUI (who can be reached at 208-885-6331), which is available at the Bruce Pitman Center; and

2. Moscow's daily paper, the Moscow-Pullman Daily News, who can be contacted at 208-882-5561.

Quality Summer Conferences

The university houses numerous summer camps and conferences, bringing many participants to campus each year. Contact Conferences, Events, and Information Services at 208-885-6662 for more information on conference services.

Fraternity and Sorority Life

For more information, call 208-885-6757, email greek@uidaho.edu, or visit <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>).

Sororities

The University of Idaho is home to fourteen sororities on campus. Four chapters are governed by the Multicultural Greek Council (MGC): Gamma Alpha Omega Sorority Inc., Lambda Theta Alpha Latin Sorority Inc., Kappa Delta Chi Sorority Inc., and Sigma Lambda Gamma National Sorority Inc. These organizations are inclusive and accept students regardless of ethnicity or race; you don't need to identify with a specific cultural or racial identity to qualify for membership. MGC Sororities engage in membership intake semiannually by hosting a showcase week where interested members take the step forward and attend informational events to determine if sorority membership is right for them. MGC sorority members may choose to live together, but they do not have a sorority house. For recruitment event information for MGC Sororities, please visit <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>) or call 208/885-6757.

There are ten Panhellenic Council (PHC) sorority chapters on the University of Idaho campus. Each chapter owns and operates its own chapter house. Our PHC chapters are Alpha Gamma Delta, Alpha Phi, Delta Delta Delta, Delta Gamma, Delta Zeta, Gamma Phi Beta, Kappa Alpha Theta, Kappa Delta, Kappa Kappa Gamma, and Pi Beta Phi. The average cost for living in a sorority is \$4,300 a semester, which includes charges for room, board, membership dues, and all activity fees.

Membership in a PHC sorority is done by mutual selection between the potential new member and the sorority through either a summer (formal) recruitment process or continuous-on-bidding, which is informal and held outside of formal recruitment periods. PHC also holds an organized, though informal, spring recruitment. Women who are interested in PHC sorority living should call 208-885-6757 or visit our website at <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>). The selection of members in each sorority is made primarily during Formal Panhellenic Sorority Recruitment, which is held in August before the beginning of the fall semester. For more information on Panhellenic Sorority Recruitment, please visit <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>).

Fraternities

The University of Idaho recognizes nineteen fraternities on campus. Among these, three chapters are governed by the Multicultural Greek Council (MGC): Omega Delta Phi Fraternity Inc., Lambda Theta Phi Latin Fraternity Inc., and Sigma Lambda Beta International Fraternity Inc. These organizations are inclusive and accept students regardless of ethnicity or race; you don't need to identify with a specific cultural or racial identity to qualify for membership. Fraternities affiliated with MGC engage in the membership intake process semiannually by hosting a showcase week where interested members take the step forward and

attend informational events to determine if fraternity membership is right for them. For recruitment event information for MGC Fraternities, please visit <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>) or call 208-885-6757.

Sixteen Interfraternity Council (IFC) fraternities are recognized on the University of Idaho campus. Our IFC fraternities are Alpha Gamma Rho, Alpha Kappa Lambda, Beta Theta Pi, Delta Sigma Phi, Delta Tau Delta, FarmHouse, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta (FIJI), Pi Kappa Alpha, Phi Kappa Tau, Pi Kappa Phi, Sigma Chi, Sigma Nu, and Theta Chi.

Membership in a fraternity is done by mutual selection, where the fraternities extend invitations to join, and potential members either accept or decline these invitations during summer (formal) recruitment. IFC fraternities also engage in an open 365 day bidding process where they can engage members and offer bids to them throughout the year. The average cost for living in a fraternity is \$3,300 a semester, which includes room, board, membership dues, and activity fees. For recruitment event information for IFC Fraternities, please visit <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>) or call 208-885-6757.

IFC fraternities may or may not offer housing (this is dependent on each individual chapter and their housing availability). Anyone interested in IFC fraternity membership should call 208-885-6757 or visit our website at <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>).

International Programs

The International Programs Office (IPO) has a campus-wide responsibility for international activities, including international student recruitment, student and faculty exchanges, intensive English language training, long- and short-term study abroad, and serving as liaison with the community regarding international interests. IPO also acts as a clearinghouse for international education activities, training, development programs, research agreements, and faculty and student Fulbright scholarships as well as provides support for international activities in the colleges. IPO is located in the Living and Learning Center at 901 Paradise Creek Street, Building #3, Ground Floor; phone 208-885-8984; fax 208-885-2859; e-mail ipo@uidaho.edu; www.uidaho.edu/international (<http://www.uidaho.edu/international/>).

International Students

International students are an integral part of the ethnic diversity of the University of Idaho. Representing up to 90 countries from around the world, international students contribute significantly to the rich cultural atmosphere of UI.

International student services are provided by international student advisors (ISAs) in IPO. All matters pertaining to students' status with the Department of Homeland Security and the U.S. Department of State are handled by the ISAs, and they also serve as official liaisons between students and their consular offices or sponsoring agencies. ISAs are involved with the progress of international students at every stage of the educational process, and students are encouraged to visit an ISA regularly to discuss concerns or questions related to immigration matters and educational, financial, or cultural adjustments.

Once a student has been admitted, general information is provided about what to bring to the U.S., the U.S. educational system, and housing. A mandatory orientation before classes begin answers initial questions and provides new students with information and skills to succeed in their academic programs as well as tips on cultural adjustment. Community contacts are arranged through the International Friendship Association (IFA). The IPO, IFA, and international student groups sponsor additional social, cultural, and educational activities.

Insurance

International students holding nonresident alien status must either purchase the UI's Student Health Insurance Plan (SHIP) for themselves and all accompanying dependents or document coverage of an equivalent insurance with the International Programs Office as part of their obligation to establish proof of financial responsibility for expenses incurred while attending the university. Failure to obtain and maintain the required insurance may subject students to sanctions, up to and including disenrollment. See the insurance (p.) section in this catalog for more information.

Education Abroad

The University of Idaho has the largest education abroad program in the state of Idaho and one of the most extensive programs in the U.S. With access to 350 universities in 65 countries, students in virtually any field can enhance their UI education. For example, students can study wildlife in

For more information on Fraternity and Sorority Life at the University of Idaho, please visit <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>), stop by the Office of Fraternity and Sorority Life in the Idaho Commons Room 302, call 208/885-6757, or email greek@uidaho.edu.

Multi-Cultural Fraternities and Sororities

The University of Idaho has three multicultural fraternities and three multicultural sororities. These are: Sigma Lambda Beta, Omega Delta Phi, Gamma Alpha Omega, Lambda Theta Alpha, Lambda Theta Phi, and Sigma Lambda Gamma colony. Multicultural fraternities and sororities at the University of Idaho do have chapter houses and are open to all races and cultural backgrounds.

Membership is by invitation and takes place after school begins in the fall. If you are interested in joining you can call 208-885-6757 or e-mail greek@uidaho.edu.

The Multicultural Greek Council is a representative body of the current multicultural Greek organizations. The council coordinates recruitment activities, formulates policies, and provides community service opportunities. For more information, visit our website at <https://www.uidaho.edu/student-life/greek> (<https://www.uidaho.edu/student-life/greek/>).

South Africa, education in Sweden, ecology in Costa Rica, architecture in Italy, or business in China. Students can also study subjects not normally offered at UI. A student pursuing a computer science major might choose to study animation in England, a student interested in microbiology might study genome science in Australia, or a student undertaking a civil engineering major might choose to study ocean engineering in Scotland. Courses in many countries are taught in English so that students without foreign language skills are still able to study abroad. However, those students who are interested in learning a foreign language will find that there are also excellent opportunities for studying Spanish, French, German, Italian, Chinese, Japanese, and Arabic as well as other world languages.

Students participating in UI education abroad programs may also take advantage of exciting opportunities in international service learning, internships, volunteerism, research, and field work. For example, students studying in India might volunteer for a cooperative promoting women's rights, health, and standing in Indian society, students studying in Berlin might participate in an internship with Mercedes-Benz, and students in Peru might participate in a service-learning program caring for llamas and alpacas in an Agricultural Animal Care Center, preserving a historically vital piece of Peruvian culture.

Students who participate in UI education abroad programs do not pay UI tuition/fees (except students participating in UI exchanges or faculty/staff-led programs). Instead, they pay the program cost for each semester/summer term they are abroad. Program costs vary, but in some cases an education abroad experience costs about the same amount as studying on campus. Students receiving federal or state financial aid and/or scholarships may be able to apply their entire award to UI education abroad programs. Students participating in semester/academic year education abroad programs are required to be full-time students unless special arrangements have been made.

Full-time UI students may also be eligible for an International Experience Grant (IEG) created through the Associated Students of the University of Idaho (ASUI). Approximately 157 of these grants are awarded to UI undergraduate education abroad participants each year. Many other education abroad scholarships are also available to UI students. Some education abroad programs, such as the University Studies Abroad Consortium (USAC), have established scholarship programs for UI. A number of UI departments and colleges also provide education abroad scholarships, and there are also many national education abroad scholarships available to UI students. Learn more about education abroad at <http://www.uidaho.edu/academics/ipo/study-abroad> (<http://www.uidaho.edu/academics/ipo/study-abroad/>)

Students may receive credit for education abroad or other experience overseas in the following ways:

1. **Residency credit toward baccalaureate degree.** Students are registered under the study abroad course number. The "Course Planning Form" form must be completed before departure to ensure proper evaluation when the program is completed. Upon receipt of an official transcript, courses are evaluated and recorded as transfer credit. Credits earned through approved UI education abroad programs are included in the residency requirement for baccalaureate degrees.
2. **Transfer credit.** Students whose needs are not met by UI education abroad programs may petition to participate in a non-UI affiliated education abroad program. If the petition is approved, students must complete all other required Education Abroad forms, including a "Financial Aid Consortium/Contract Agreement" (signed by the education abroad institution and submitted to the International Programs Office before departure) for registration to be processed and financial aid to be disbursed. Students are registered under the non-UI education abroad course number. Upon receipt of an official transcript, courses are evaluated and recorded as transfer credit. Credits earned through non-UI education abroad programs are not included in the residency requirement for baccalaureate degrees.
3. **Directed study.** Students may petition to plan their own educational experiences abroad, and arrange *in advance* for credit from any appropriate department. This is for education comparable to that gained in other courses of that department, but it may be as general and inclusive as the department will allow. Students choosing this option must also fill-out all appropriate UI Education Abroad applications and mandatory forms.
4. **Course challenge.** Some courses may be challenged on the basis of knowledge gained abroad. See regulation I-2 (<http://uidaho.smartcatalogiq.com/en/2017-2018/University-of-Idaho-General-Catalog/General-Requirements-and-Academic-Procedures/I-Alternative-Credit-Opportunities/>).
5. **Experiential learning.** Credit may be awarded to students for knowledge and/or competence gained in foreign travel. See regulation I-2 (<http://uidaho.smartcatalogiq.com/en/2017-2018/University-of-Idaho-General-Catalog/General-Requirements-and-Academic-Procedures/I-Alternative-Credit-Opportunities/>). This option requires the submission of a portfolio demonstrating knowledge and competence.

Students who participate in UI education abroad programs do not pay UI tuition/fees (except students participating in UI faculty/staff-led programs). Instead, they pay the program cost for each semester/summer term they are abroad.

Students participating in semester/academic year education abroad programs are required to be full-time students unless special arrangements have been made.

Search Education Abroad programs options here (<http://uidaho-sa.terradata.com/?FuseAction=Programs.SimpleSearch>).

For more information on education abroad (study, intern, work, research, or volunteer abroad), call, email, or visit the International Programs Office in LLC Building #3, Ground Floor (phone: 208-885-7870; email: abroad@uidaho.edu).

UI is affiliated to the following programs and uses these grading systems:

Education Abroad Program	Placement Sites	Duration	Grades	Reqd GPA
Accademia Italiana	Italy	Semester, year, summer	P/F	2.5
Al Akhawayn University	Morocco	Semester, year, summer	P/F	2.5
Chulalongkorn University	Thailand	Semester, year, summer	P/F	2.5
EcoLife Expeditions - North-West University	South Africa	Winter, summer	P/F	2.5
Harlaxton College- University of Evansville	England	Semester, year, summer	A-F	3
Helping Hands Health Education (Tribhuvan Univ)	Nepal	Semester, year, summer	A-F	2.5
Semester at Sea (Colorado State Univ)	Various	Semester, year, summer	A-F	2.75
Hochschule für Technik und Wirtschaft Berlin (HTW)	Germany	Semester, year	P/F	2.5
The Hague	Netherlands	Semester, year	P/F	2.5
KCP International Language Institute	Japan	Semester, year, summer	A-F	2.5
Lancaster University	England	Semester, year	P-F	2.75
Lincoln University	New Zealand	Semester, year	P-F	2.75
Nagasaki University of Foreign Studies	Japan	Semester, year	A-F	2.5
National Chiayi University	Taiwan	Semester, year	P/F	2.5
Regent's University London	England	Semester, year, summer	P/F	2.75
Royal Thimpu College	Bhutan	Semester, year	A-F	2.5
Ryukoku University	Japan	Semester, year	P/F	2.50
Southern Denmark University	Denmark	Semester, year	P/F	2.5
Tampere University of Technology	Finland	Semester, year	P/F	2.50
Universidad de Zaragoza	Spain	Semester, year	P/F	2.5
University College Dublin	Ireland	Semester, year, summer	P/F	3.0
University of Nottingham Ningbo	China	Semester, year, summer	P/F	2.50
University of the Sunshine Coast	Australia	Semester, year	P/F	2.5
Council on International Educational Exchange (CIEE)	66 institutions in 36 countries	Semester, year, summer	A-F	2.50-3.00
International Student Exchange Program (ISEP)	328 institutions in 54 countries	Semester, year, summer	P/F	2.75
International Studies Abroad (ISA)	Argentina, Australia, Brazil, Chile, China, Colombia, Costa Rica, Cuba, Czech Republic, Dominican Republic, England, Fiji, France, Germany, Greece, India, Ireland, Italy, Japan, Jordan, Morocco, Netherlands, New Zealand, Peru, Scotland, South Africa, South Korea, Spain, Thailand, Vietnam	Semester, year, summer	A-F	2.50-3.00

University Studies Abroad Consortium (USAC)	Australia, Brazil, Chile, China, Costa Rica, Cuba, Czech Republic, England, France, Germany, Ghana, India, Ireland, Israel, Italy, Japan, Korea, The Netherlands, New Zealand, Norway, Poland, Scotland, South Africa, Spain, Sweden, Thailand, Turkey, Uruguay	Semester, year, summer	A-F	2.50-3.00
Universidad Publica de Navarra	Spain	Semester, Year	P/F	

Mutual Responsibility Agreement

U of I's acceptance of a student for admission and the student's enrollment in the university constitute an agreement of mutual responsibility. The student's part of this agreement is to accept established U of I policies and rules, to respect the laws of governmental units, and to act responsibly and in a manner appropriate to these laws, policies, and rules. U of I's part is to carry out its commitment to higher education, to fulfill its responsibilities in pursuit of the academic goals and objectives of all members of the university community, and to meet its obligation to provide an atmosphere in which students will have an opportunity to be heard in matters affecting their welfare as students. U of I must take appropriate disciplinary action when it has been ascertained that a student's action is contrary to U of I regulations and thus that this agreement has been violated.

Professional Licensure

Professional Licensure Notification Requirements: The University of Idaho complies with the National Council for State Authorization Reciprocity Agreements (NC-SARA) reporting requirements for professional licensure programs. NC-SARA requires the U of I to determine the states in which our students are located for the purpose of disclosing whether our academic programs meet licensure requirements in the state of student location. NC-SARA also requires that the U of I keep all students, applicants and potential students who have contacted the U of I about a program leading to licensure or certification informed as to whether the program meets state licensing requirements. To comply with these requirements, relevant U of I faculty, staff, and students shall adhere to the following procedures.

Procedures

1. Determination and Documentation of Student Location. The Office of the Registrar will document the state in which a student is located as self-reported by the student during the admissions process. For purposes of this policy, the student's mailing address will be considered the student's location. A student's reported state of location upon admission will be the student's location for the purpose of state authorization or professional licensure program disclosures, unless U of I formally receives notice of student relocation, as described in paragraph 2 below.

2. Determination and Documentation of Student Relocation. The University formally receives notice of student relocation when the student changes their mailing address with the Office of the Registrar.

3. Student Responsibility for Location and Relocation Information. Once admitted to U of I, it is the student's responsibility to update their state

of location with the Office of the Registrar any time their state of location changes. If a student changes their state of location while enrolled in a program leading to professional licensure, the student must notify the Office of the Registrar in order to receive the disclosures described in paragraph 5 below.

4. Individual Disclosure to Prospective Students. For prospective students to a degree program leading to a professional certification or licensure, no matter the method of delivery, U of I will send, prior to the student making a financial commitment to U of I, a written disclosure stating whether the U of I degree program meets the educational requirements for licensure or certification in the student's location. This individual disclosure will state one of the following:

- The program's curriculum meets the state educational requirements for licensure in the state in which the prospective student is located; or
- The program's curriculum does not meet the state educational requirements for licensure in the state in which the prospective student is located; or
- No determination has been made as to whether the program's curriculum meets the state educational requirements for licensure in the state in which the prospective student is located. If no determination has been made, U of I will provide the current contact information for any applicable licensing boards and will advise the student to determine whether the program meets requirements for licensure in the state where the student is located.

5. Individual Disclosure to Currently Enrolled Students. For students currently enrolled in a degree program leading to professional certification or licensure, if U of I determines at any time that the program's curriculum does not meet state educational requirements for licensure in the state in which the enrolled student is located, then U of I will notify the student in writing within 14 calendar days of U of I making such determination. In addition, U of I will send an individualized disclosure to the student within 14 calendar days of being officially notified of the student's relocation if the student relocates to a state where the program either does not meet the educational requirements for licensure or U of I has not made such a determination.

6. Unit Administrator Responsibility for Licensure Information. The administrator of a unit offering an educational program leading to professional licensure is responsible for determining if the program's curriculum meets or does not meet state educational requirements for licensure in the states in which its enrolled students are located, and is responsible for monitoring changes to those educational requirements. The unit administrator shall conduct an annual review each June, making all reasonable efforts to determine whether a program meets

licensure requirements. The Office of the Provost will be contacting unit administrators, and unit administrators must respond to the Office of the Registrar and the Office of the Provost by July 1st. Any changes shall be reported to the Office of the Registrar and Office of the Provost by July 1. Changes in licensure requirements will be published on the Office of the Provost web site.

Student Health and Community Resources

- Early Childhood Education (p. 69)
- Counseling and Mental Health Center (p. 69)
- Testing Center (p. 69)
- Dean of Students (p. 69)
- Multicultural Affairs (p. 69)
- Student Health Insurance Program (p. 70)
- Student Health Services (p. 70)
- Violence Prevention Programs and Resources (p. 70)
- Women's Center (p. 70)

Early Childhood Education

U of I Children's Center, 421 Sweet Ave; www.uidaho.edu/student-affairs/childrens-center (<https://www.uidaho.edu/student-affairs/childrens-center/>)

The U of I Children's Center offers year-round childcare for children from 6 weeks through 5 years of age. Accredited by the National Association for the Education of Young Children, the U of I Children's Center offers a safe and nurturing environment as well as developmentally appropriate curriculum that promotes the physical, social, emotional, and cognitive development of young children.

U of I Child Development Lab, Mary Hall Niccolls Building Rm 103, 751 Campus Drive; www.uidaho.edu/cals/family-and-consumer-sciences/teaching-labs/child-development-laboratory (<https://www.uidaho.edu/cals/family-and-consumer-sciences/teaching-labs/child-development-laboratory/>)

The Margaret Ritchie School of Family and Consumer Sciences Child Development Laboratory offers half-day morning preschool for children 3-5 years old during fall and spring semester. The lab is accredited by the National Association for the Education of Young Children and offers U of I FCS students the opportunity to observe, plan, and lead experiences for children focusing on physical, social, emotional, and cognitive development.

Counseling and Mental Health Center

Continuing Education Building, 3rd Floor; 208-885-6716

The Counseling and Mental Center (CMHC) is a multi-disciplinary team consisting of psychologists, clinical social workers, and a psychiatric nurse practitioner. Our mission is to support students and their mental health by providing individual and group therapy, psychiatric treatment, psychological assessment, outreach and consultation as well as substance use programs and services. We also provide emergency mental health services that are accessible to students through crisis support services on campus and 24-hour access to a mental health provider. In addition, we collaborate with our campus partners through liaison relations that include health and wellness initiatives designed to reduce stigma and increase help-seeking behaviors. The CMHC contributes to the university's academic mission through its training and supervision of graduate practicum students, doctoral interns, postdoctoral residents and social work students and teaching academic coursework in the WWAMI medical education program. We are deeply committed to building a welcoming, affirming, and supportive environment for all students that reduces stigma and increases access

to mental health services, particularly for marginalized and underserved populations.

Testing Center

Continuing Education Building, 3rd Floor; 208-885-5138

The Testing Center offers a variety of testing services and provides a secure, controlled, comfortable, and accessible environment for test delivery for U of I students, faculty, staff, and community members. Our testing services include placement tests such as ALEKS, which is used to determine initial placement in math and English courses, and advanced placement exams such as CLEP, which allows students to earn college credit by passing exams in a variety of subject areas. The Testing Center also administers many of the national testing programs such as the SAT, ACT, GRE, TOEFL, MELAB, MCAT, GMAT, MAT, and PRAXIS. Several certification exams are available as well, including Microsoft Excel, STAMP, GED, ASE, NCEES, TSA, PGA, and ACE. A fee is charged for most proctoring services.

The Testing Center is committed to offering services that are inclusive and respectful of all students, regardless of race and/or ethnicity, sex, color, religion, spirituality, creed, national origin or ancestry, age, marital status, sexual orientation, gender identity, gender expression, disability, or veteran status. For additional information on services provided by the Testing Center, visit <https://www.uidaho.edu/current-students/testing-center> (<https://www.uidaho.edu/current-students/testing-center/>).

Dean of Students

TLC 232; 208-885-6757; askjoe@uidaho.edu; www.uidaho.edu/dos (<https://www.uidaho.edu/dos/>)

The University of Idaho is comprised of a diverse student population that requires the UI to have a diverse student services program. The Dean of Students Office provides a variety of services that focus on assisting students. Programs and services include advising students in living groups, students living off campus, ethnic minority students, and veterans. In addition, the Dean of Students Office coordinates New Student Orientation, the Women's Center, the Child Care Center, the National Student Exchange Program, student leadership activities, fraternity/sorority programs, and student discipline/conduct activities.

This wide range of programs and services includes assisting families and students who experience crisis situations that disrupt normal academic activities.

Staff members are trained to work with individuals and groups of students or to serve as a liaison between students, departments, and agencies on and off campus.

All these services and programs are supportive of the academic mission of UI and are an integral part of the student's total education at the university.

Multicultural Affairs

Office of Multicultural Affairs; TLC. 230; 208-885-7716; fax: 208-885-9494; oma@uidaho.edu; www.uidaho.edu/oma (<https://www.uidaho.edu/oma/>)

UI is committed to establishing and maintaining a campus environment that promotes cultural diversity. This is accomplished through the provision of student services that begin to address specific needs of Asian-American/Pacific Islander, Black or African-American, Chicano/

Latino, and Native-American students. While offering targeted services and programs to these populations, the Office of Multicultural Affairs (OMA) is fundamentally a campus-wide resource meant to benefit the educational experience of the entire campus community by leading in the creation of an environment that supports multiculturalism and promotes inclusion.

OMA provides assistance to these traditionally underrepresented students in the areas of advocacy, financial aid, and accessing university student support programs. OMA is staffed by a full time director, a program coordinator, and an administrative assistant. Staff members are involved in campus-wide leadership and state-wide organizations to promote diversity. One important resource of these efforts is a group of student mentors selected to help new multicultural students connect with resources and learn from the experiences of more experienced U of I students. This mentor group is called P.A.C.E. (Peer Advising on the College Experience). OMA continuously works with other departments across the university to resolve issues that may hinder recruitment, retention, or the success of multicultural students.

Multicultural student organizations serve a vital role in retention and helping to promote and support cultural diversity on the UI campus. Some of the organizations that are currently active are the Asian American/Pacific Islander Association (AAPIA), the Native American Student Association (NASA), The Native-American Graduate Student Association, Gamma Alpha Omega Sorority Inc., Iota Psi Phi Sorority Inc., Lambda Theta Alpha Sorority Inc., the Interested Ladies of Lambda Theta Alpha, the University of Idaho's Black Student Union (UI-BSU), Organizacion de Estudiantes Latino Americanos (OELA), MEChA (Movimiento Estudiantil Chicanos de Aztlán), the Hispanic Business Association, Sigma Lambda Beta Fraternity Inc., GSA (the Gay Straight Alliance), WOCA (Women of Color Alliance), the Men of Vision, the Hispanic Business Association (HBA), Sabor de la Raza, CAMPOS (the College Assistance Migrant Program Organization of Students), ALI (the Association of Latin-Americans and Iberians), ASA (African Students Association), the Associated Students of African Descent, and UNITY. OMA assists these and other organizations in planning and executing campus activities of special interest to their group's members (e.g., cultural heritage months, student leadership retreat, organizational meetings, and campus educational cultural activities). Many meetings of these student groups are held in the Multicultural Student Center, which is located in Rooms 228 and 229 of the Teaching and Learning Center (TLC). For further information, contact the Office of Multicultural Affairs' main office in room 230 of the Teaching and Learning Center, call 208-885-7716, email oma@uidaho.edu, or visit www.uidaho.edu/oma (<https://www.uidaho.edu/oma/>).

Student Health Insurance Program

Student Health Building;
208-885-2210; health@uidaho.edu; www.uidaho.edu/current-students/student-health-services/insurance (<https://www.uidaho.edu/current-students/student-health-services/insurance/>)

The University of Idaho requires all full-time, fee-paying, degree-seeking undergraduate students enrolled in 12 or more credits; graduate/Law students enrolled in 9 or more credits; and all international students to submit proof of valid health insurance as a condition of enrollment. Students subject to the requirement may choose to rely on personal health insurance or enroll in UI's Student Health Insurance Program.

Student Health Services

Student Health Services; 208-885-6693; www.uidaho.edu/studenthealth (<https://www.uidaho.edu/studenthealth/>)

Student Health Services, in partnership with Moscow Family Medicine, provides a broad spectrum of outpatient medical care services. The medical staff includes Board-certified physicians, physician assistants, and nurse practitioners. Services include lab and X-ray, nutrition counseling, and psychiatry. Additional counseling services are available in cooperation with the Counseling and Testing Center.

Health education classes and wellness programs are available to students. These programs range from fitness and nutrition classes to substance abuse and smoking cessation courses. A list of programs and additional information is available at the Student Health Services website, www.uidaho.edu/studenthealth (<https://www.uidaho.edu/studenthealth/>).

The hours of operation, scope of services, and fee-for-service charge schedule are subject to change during the academic year. Please look for changes notices at the Student Health Services website.

Violence Prevention Programs and Resource Services

Resource specialists provide violence prevention and risk reduction programming for students, staff, and faculty on campus. Services include crisis intervention and referrals for on-going campus/community resources. Individual students, student leaders, university administrators, and community medical/legal professionals collaborate with resource specialists to create and implement positive campus policy. Risk reduction educational programs are available to all students at no cost. For more information, call 208-885-2956 or visit the Teaching and Learning Center Room 232.

Women's Center

The Women's Center staff is committed to providing a welcoming environment and a sense of community for everyone. At the Women's Center, we foster personal and professional growth through a network of support and services, including educational and cultural enrichment programming on women's and gender issues, information and referrals, and confidential advocacy services.

Programs and services at the Women's Center include a wide variety of events and programs held throughout the academic year, a comfortable lounge equipped with a fully-stocked kitchenette and free hot beverages, a study space with computers and access to a scanner and high-speed printer, resources for student organizations, extensive volunteer opportunities, academic advising and internships offered for credit in a variety of disciplines, a private lactation and advocacy room, and confidential support for survivors of trauma. The Women's Center is located in Suite 109 on the ground floor of the Memorial Gym.

GENERAL REQUIREMENTS AND ACADEMIC PROCEDURES

The following procedures and regulations have been adopted to help students, faculty members, and administrators carry out the University of Idaho's overall academic program successfully. Students have the ultimate responsibility for meeting university, college, and departmental graduation requirements and academic procedures. Students, with the help of faculty advisors, should check their records each time they prepare to register to ensure that they are correctly and systematically fulfilling their degree requirements. It is the responsibility of advisors, major professors, and deans to assist students in understanding and complying with these requirements and procedures. The Office of the Registrar assists by checking students' records for compliance with the regulations in this section of the catalog. Requests to waive curricular requirements, academic provisions, or academic standards should be presented to the appropriate department and/or college.

Rights Reserved to the University

Catalogs, bulletins, and course or fee schedules shall not be considered as binding contracts between the University of Idaho (U of I) and students. The U of I reserves the right at any time, without advance notice, to:

1. withdraw or cancel classes, courses, and programs;
2. change fee schedules;
3. change the academic calendar;
4. change admission and registration requirements;
5. change the regulations and requirements governing instruction in and graduation from the U of I and its various divisions; and
6. change any other regulations affecting students.

Changes go into force whenever the proper authorities so determine and shall apply not only to prospective students but also to those who are matriculated at the time in the U of I. When economic and other conditions permit, the U of I tries to provide advance notice of such changes. In particular, when an instructional program is to be withdrawn, the U of I will make every reasonable effort to ensure that students who are within two (2) years of completing graduation requirements, and who are making normal progress toward completion of those requirements, will have the opportunity to complete the program which is to be withdrawn. At the discretion of the Provost, departments initiating a program withdrawal may allow for students currently admitted to the withdrawn program longer than a period of two years to complete the program, but not to exceed the catalog expiration of the withdrawn program.

The U of I also reserves the right, when a student has failed to discharge any obligation to the U of I, to deny that student the privilege of re-registering or to withhold the student's records or information based on the records. Students may verify the status of their accounts and be informed of any financial obligation to the U of I by inquiring at the cashier's window in the Bruce Pitman Center.

Academic Appeals Process

Students may petition the appropriate committee for exceptions to the administrative and academic regulations of the University of Idaho.

Petitions are submitted to one of the following committees, depending on the nature of the petition.

Academic Petitions Committee

This committee hears student appeals for exceptions to the regulations in this catalog section including, but not limited to, such matters as:

1. registration for courses after the deadline,
2. reinstatement from 3rd disqualification,
3. withdrawing from a course after the deadline, and
4. expunging a grade of W from an academic record.

Appeals should be presented to the Academic Petitions Committee on forms available in college offices. www.webpages.uidaho.edu/fsh/1640.html#1640.04 (<http://www.webpages.uidaho.edu/fsh/1640.html#164004>)

Appeals for reinstatement after second disqualification are directed to the college. If the college committee denies the appeal, the student may appeal to the provost or provost's designee.

Academic Hearing Board

This committee hears student appeals from decisions made by college authorities concerning, but not limited to, such matters as:

1. eligibility for advanced placement or credit by examination,
2. objectivity or fairness in making, administering, and evaluating class assignments,
3. maintenance of standards for conscientious performance of teaching duties, and
4. scheduling of classes, field trips, and examinations.

The board does not hear appeals concerning requirements or regulations of the College of Graduate Studies or the College of Law. www.webpages.uidaho.edu/fsh/1640.html#1640.02 (<http://www.webpages.uidaho.edu/fsh/1640.html#164002>)

Administrative Hearing Board

Students submit appeals to the Administrative Hearing Board on administrative decisions in such matters as residence status for tuition purposes, granting of student financial aid, and assessment of fees or charges (except in connection with parking regulations), and disputes involving interpretation and application of policies concerning such matters as student records, smoking, and treatment of disabled persons. www.webpages.uidaho.edu/fsh/1640.html#1640.06 (<http://www.webpages.uidaho.edu/fsh/1640.html#164006>)

Appeals from decisions of the Academic Petitions Committee and the Academic Hearing Board are submitted to the provost. If the provost concurs with the body whose decisions was appealed, the appellant then may appeal to the president and regents if the president and regents consent to hear the appeal.

Decisions of the Administrative Hearing Board may be appealed to the president and regents when they consent to hear such appeals.

A - Matriculation

Applicants for enrollment in any course offered by U of I for college credit, except correspondence study, submit personal data and credentials covering all previous academic work (see "Undergraduate Admission to the University (p. 41)" or "Graduate Admission to the University (p. 41)"). After U of I has received these credentials and approved the application, registration access is given to the applicant and the applicant's first registration at U of I concludes the matriculation process.

B - Registration

B-1. Registration Access

Registration access is given to new students as described in section A - Matriculation. It is also given to students who were previously enrolled within two years of the term in which they wish to register. Former students who have not been enrolled at U of I within those two years must be re-admitted by the Undergraduate or Graduate Admissions Office at least one month prior to the term in which they wish to register. Such students will be required to submit transcripts from any institutions attended since their last registration at U of I, and they may also be required to complete a residence questionnaire. Failure to meet the deadline may cause a delay in registration. Undergraduate students are required to meet with their academic advisor prior to registration.

B-2. Admission to Classes

Instructors do not admit anyone to class whose name does not appear on the class roster. U of I instructors are given the authority to grant or deny access to classes by visitors.

B-3. Auditing Classes

Auditing a course consists of attendance without participation or credit. Audited courses will be recorded on a student's permanent record. The permission of the instructor is required before a student may audit a course. Seating preference in a course will be given to students who are completing the course for credit (see C-2 and C-3 (p. 73) for deadlines).

B-4. Registration for Courses Without Completion of Prerequisites

Students who have not completed the prerequisites to a course for which they are otherwise eligible may register for the course with the instructor's approval.

B-5. Registration of Lower-Division Students in Upper-Division Courses

All academic programs give priority in the first two years to meeting the general requirements for the appropriate degree and acquiring the foundation for advanced study; therefore, freshman students may not take upper-division courses. Exceptions may be made for students who have fulfilled the prerequisites and who are well prepared in their field of study. In such cases, the instructor may, with the concurrence of the student's advisor, authorize the exception.

B-6. Registration of Undergraduate and Non-degree Students in Graduate Courses

Undergraduate and non-degree students may register in graduate courses under the conditions outlined in the College of Graduate Studies section with the prior written approval of the instructor of the course, the student's advisor, and the dean of the College of Graduate Studies.

B-7. Registration of Students with Baccalaureate Degrees as Undergraduates

To register as undergraduates, students with baccalaureate degrees must secure the permission of the dean of their undergraduate college and file a statement with the registrar indicating that they understand that the work will not be classified as graduate work and cannot be used toward a graduate degree at a later date (see J-7-b (p. 78)).

B-8. Registration for Full Semester Courses

Students may register for full semester courses through the sixth day of the semester. A student may register for a course with instructor approval through the tenth day of the semester.

B-9. Registration for Accelerated and Other Short Courses

Students may register for accelerated and other short courses at any time up to and including the starting date of the course without petition.

B-10. Pass-Fail Option

B-10-a. Undergraduate Students

- After consultation with their advisors, undergraduates who have a cumulative grade-point average of 2.00 or higher are permitted to enroll in one course a semester under this P/F option. (The grade-point requirement is not applicable to students who are taking university-level courses for the first time.) This procedure is separate from taking courses that are regularly graded P/F. Within the limitations specified above, an undergraduate may enroll under the pass-fail option in any course EXCEPT:
 - courses listed by number and title in the student's major curriculum as printed in the individual department section;
 - courses taken to meet the distributional requirements of the college or curriculum, unless allowed for P/F enrollment by the college in which the student is majoring;
 - courses used to satisfy the general education requirements;
 - courses in the major subject field; and
 - courses in closely related fields that are excluded from this option by the student's department (see B-11-d Reporting of Grades).
- Students in officer education programs (OEP) may enroll under this regulation in courses required because of their affiliation with the OEP ONLY with the permission of the administrator of the OEP department concerned.
- A maximum of 12 credits earned in courses under this regulation may be counted toward a baccalaureate degree.

B-10-b. Graduate Students

- With the approval of the major professor concerned (or advisor in the case of an unclassified student) and the dean of the College of

Graduate Studies, graduate students may enroll in a limited number of courses under this P/F option. This procedure is separate from taking courses that are regularly graded P/F.

2. Courses that may be taken by graduate students under this regulation are:
 - a. any course not in the student's designated major and
 - b. any course required to remove a deficiency or to provide background for the student's program, unless the major department stipulates that such deficiency courses must be taken on a regular-grade basis and completed with an 'A' or 'B.'
3. Of the minimum number of credits required for a degree, no more than three credits in a master's or specialist program or nine in a doctoral program may be taken under this P/F option.
4. To have 'P' recorded for courses taken under this regulation, a graduate student must earn a 'C' or above. A grade of 'D' will be converted to an 'F' on the student's records.
5. An unclassified student may enroll for courses under this option with the approval of their advisor (if assigned) and the dean of the College of Graduate Studies. If, however, at a later date, an unclassified student is admitted to a degree program, the above regulations apply and no changes to regular letter grades will be permitted.

B-10-c. Adds, Drops, and Changes

Students may add or drop a P/F option course in the same manner as a regular course, and they may change from P/F to regular-grade classification, or vice versa, if they do so no later than the deadlines stated in regulation C and the academic calendar. Students may make these changes by securing the signatures of the advisor or major professor and dean concerned.

B-10-d. Reporting of Grades

Instructors are not notified as to which students are enrolled in courses under this P/F option. Grades are reported in the same manner as grades in courses taken on a regular-grade basis. The registrar is responsible for converting 'C's or above to 'P's on students' records and, for graduates, 'D's to 'F's. Grades of 'D' reported for undergraduates are recorded on students' records and are not converted.

B-11. Registration in Joint-Listed Courses

A student who enrolls in a joint-listed course may only earn credit at the level the student initially completes the course. A student who enrolls in the same joint-listed course at a different level will not receive credit on their transcript.

C - Changes in Registration

C-1. Adding a Course

A student may add a full semester course online through the sixth day of the semester. A student may add a course with instructor approval through the tenth day of the semester. These periods are prorated for accelerated or short courses.

C-2. Dropping a Course

A student may drop a full semester course through the tenth day of the semester without a grade of 'W'. This period is prorated for accelerated or short courses. Students may not drop a course by simply staying out of class.

C-3. Withdrawing from a Course

Beginning with the eleventh day of the semester and ending with the tenth week of the semester, a student may withdraw from a course. During this period, a grade of 'W' will be recorded on the student's record and will count against their 21-credit withdrawal limit (see regulation C-4). This period is prorated for accelerated or short courses. A student may not withdraw from a course after a final grade has been assigned for that course, even if this occurs before the deadline to withdraw from the course.

C-4. Credit Withdrawal Limitation

The number of credits that a student may withdraw from during their undergraduate career at U of I is limited to 21 credits. If a student attempts to drop a course(s) that would bring the total credits they will have withdrawn from above 21, the student will not be allowed to do so. When a student withdraws from the university, the credits in the courses for the semester do not count against the withdrawal credit limitation (see regulation G (p. 76)).

D - Credit and Continuing Education Unit

D-1. Unit of Credit Defined

A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or the equivalent amount of work over a different amount of time, or
2. At least an equivalent amount of work as required in paragraph 1 of this definition for other academic activities, including laboratory work, internships, practica, studio work, short courses, workshops and other academic work leading to the award of credit hours.

D-2. Credit-Load Limitations

(Also see J-5 (p. 78).)

D-2-a. Fall and Spring Semesters and Summer Session

1. During the Fall and Spring, an undergraduate student may register for no more than 20 credits in a semester. This number may be increased to 22 with specific written approval by their academic dean. Registration for more than 22 credits (except for students enrolled in the WWAMI Medical Education Program) is permitted only on approval of a petition to the Academic Petitions Committee (petition forms are available in deans' offices). During the Summer Session, an undergraduate student may register for no more than 18 credits. A law student may register for no more than 18 credits in a semester without approval of the Associate Dean in the College of Law. See the College of Graduate Studies (<https://catalog.uidaho.edu/colleges-related-units/graduate-studies/#generalgraduaterelationstext>) section for the credit limitation for a graduate student.
2. Registration for courses with conflicting or overlapping meeting times is allowed only with the approval of the instructor of each affected course.

D-2-b. Full-Time Employees

A full-time U of I employee may register for no more than six credits in a semester or three credits during the Summer Session. Written approval by the employee's departmental administrator and dean or director must accompany the registration form.

D-2-c. Non-degree Students

A non-degree student may register for no more than 7 credits each semester and may complete a maximum of 32 semester credits. Students on official U of I exchange programs are not limited to 7 credits each semester. International exchange students must take 12 or more credits. Upon completion of 32 semester credits, the student must either be admitted as a degree-seeking student at U of I or submit a letter of appeal to continue as a non-degree student.

D-2-d. Dual Credit Students

Under Idaho State law, eligible high school students are given the opportunity to enroll in University of Idaho undergraduate courses and receive both college credit and credit towards high school graduation while still enrolled in high school. The number of credits for which a dual credit student may register should be based on advising from both the high school and university who will approve the courses. However, a dual credit student may register for no more than 12 credits each semester.

D-3. Transfer Credit

Credit is accepted for work completed in accredited institutions of higher education as provided in the regulations covering the admission of transfer students (see "Transfer Admission Requirements (p. 41)"; also see E-4 (p. 74) and J-5 (p. 78)).

D-4. Review and Prerequisite Courses

Students will not receive credit for courses taken in review or for courses that are prerequisites of courses they have already completed in the same subject area. Exceptions include the following:

1. As stated in I-1,
2. Students who transfer in a course for which the U of I requires BIOL 114 or BIOL 115 (but who have not yet taken BIOL 114 or BIOL 115), may take BIOL 114 and BIOL 115 for credit.

D-5. Continuing Education Unit

Short learning activities may also be evaluated by a system of uniform continuing education units. Such units are granted in accordance with the following guidelines, which are set forth by the national Task Force on Continuing Education. A continuing education unit is expected to require 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instructors. Continuing education, as used in this definition, includes all instructional and organizational learning experiences in organized formats that impart noncredit education to post-secondary-level learners. These properties of continuing education may be applied equally under the system regardless of the teaching-learning format, program duration, source of sponsorship, subject matter, level, audience, or purpose. The number of units to be awarded is determined by considering the number of contact hours of instruction, or the equivalent, included in the educational activity. Reasonable allowance may be made for activities such as required reports, lab assignments, field trips,

and supervised study. A student may not receive academic credit and continuing education units for the same learning activity.

D-6. Professional Development Credit

Professional development credit may be offered to improve effectiveness of teachers and administrators in raising student achievement. Courses must include a minimum of 15 contact hours per credit. Credits earned in professional development courses may not be applied toward a baccalaureate degree.

E - Grades**E-1. Grading System****E-1-a. Definitions of Grades**

For purposes of reporting and record, academic work is graded as follows: A - superior; B - above average; C - average; D - below average; F - failure; I - incomplete work of passing quality (see regulation F); W - withdrawal; WA - withdrawal to audit; WU - withdrawal from the university; P - pass (see below); IP - in progress (see E-2); N - unsatisfactory and must be repeated (used only in ENGL 101 and ENGL 102); S - satisfactory (used only in CEU courses); CR - Credit, and NC - No Credit (may be used only in professional development courses).

E-1-b. Grades of 'P'

Grades of 'P' may be reported at the option of the department on a course-by-course basis in noncompetitive courses such as practicum, internship, seminar, and directed study. Grades of 'P' are also reported in courses carrying the statement, "Graded P/F," in the course description. In courses in which 'P's are to be used, the method of grading will be made known to the students at the beginning of the semester, and the grading system will be uniform for all students in the courses. Grades under the pass-fail option are not affected by this regulation because the conversion of the regular letter grade is made by the registrar after instructors turn in the class rosters.

E-1-c. Mid-Semester Grades

Mid-semester grades in undergraduate courses must also conform to the above regulations. It is permissible to report 'P's at mid-semester ONLY in courses that have been approved for grading on this basis.

E-2. In-Progress (IP) Grades**E-2-a. Grades in Undergraduate Senior Thesis or Senior Project**

The grade of 'IP' (in progress) may be used to indicate at least minimally satisfactory progress in undergraduate courses such as senior thesis or senior project that have the statement "May be graded IP" in the course description. When the thesis or project is accepted, the 'IP' grades are to be removed (see E-2-c). Grades of 'IP' in undergraduate courses are considered to represent grades of at least 'C' or 'P'. If, in any given semester, the instructor considers the student's progress unsatisfactory, an appropriate letter grade ('D' or 'F') should be assigned for that semester.

E-2-b. Grades in Graduate Research Courses

The grade of 'IP' (in progress) may be used in courses 500 (Master's Research and Thesis), 599 (Non-thesis Master's Research), and 600 (Doctoral Research and Dissertation). When the thesis, dissertation, or other research document is accepted, or when a student ceases to

work under the faculty member who is supervising their research, the 'IP' grades are to be removed (see below). Grades of 'IP' in graduate courses are considered to represent at least grades of 'B' or 'P'. If, in any given semester, the faculty member supervising the student's research considers the student's progress unsatisfactory, a regular letter grade ('C', 'D', or 'F') should be assigned.

E-2-c. Removal of IP Grades

Departments may use on a department-wide basis either the P/F grading system or regular letter grades, as well as 'P', when removing the previously assigned 'IP' grades (e.g., a student who enrolled for six credits in course 500 one semester, four credits another semester, and five credits an additional semester could have 15 credits of 'IP' grades removed with different grades for each of the blocks of credit registered for each semester, such as six credits of 'A', four credits of 'B', and five credits of 'P').

E-3. Grades in Law Courses

For additional provisions applicable to grades in law courses, see the College of Law (p. 304) section.

E-4. Computing Grade-Point Averages

Grades are converted by assigning the following number of points per credit for each grade: A - 4, B - 3, C - 2, D - 1, and F - 0. In computing the grade-point average, neither credits attempted nor grade points earned are considered for the following: courses graded I, IP, P, S, W, WU, N, CR, NC, non-U of I sponsored independent study courses, continuing education units, credits earned under regulation I, or courses taken at another institution. Credit earned at non-U.S. institutions is recorded as pass ('P') or fail ('F'), except for some courses taken through an approved study abroad program.

The U of I considers only the *Institutional* grade-point average official. Although both institutional and overall grade-point averages are printed on transcripts, the overall grade-point average (which includes transfer courses) is informational only. To calculate a grade-point average divide the *Quality Points* (course credits times the points assigned for the grade earned) by the *GPA Hours* (course credits attempted *not* including grades of I, IP, P, W, WU, or N). *Earned Hours* indicate the total number of semester credits successfully completed (course grades of A, B, C, D, or P earned). Grades of 'P' are included in *Earned Hours* but do not earn any quality points; grades of 'F' are included in *GPA Hours*, but not in *Earned Hours*.

E-5. Replacing Grades

E-5-a. Repeatable Courses

Some courses are listed in this catalog as "repeatable" (i.e., the credits listed for the courses show a maximum number of credits that may be earned or show "credit arranged" or "max arranged," indicating that the courses may be repeated for credit without restriction as to maximum). Other courses show one credit entry for the course (e.g., "1 credit," "2 credits," etc.) and may be taken only once for credit (see procedure for repeating to replace a grade below). [See the section entitled "Credit Designations (p. 512)" for more information.]

E-5-b. Repeating a Course for Grade and Grade Point Average Improvement

An undergraduate student may repeat a course for grade and grade point average improvement. Although all grades remain on the record, the highest grade received will be calculated within the student's grade

point average and credit earned in the course. Courses taken at other institutions will not qualify for repeat status unless the student can provide the Registrar's Office written proof from the appropriate U of I department that the courses involved were equivalent or the course has already been evaluated by the academic department as equivalent. Enrollment for a repeated course beyond the third attempt requires permission by the student's college.

A graduate student may repeat a course in which a grade of 'C' or lower has been earned only upon specific recommendation by the student's advisory committee and with approval of the major professor. All grades will remain on the student's record. The highest grade earned will be used for grade point average calculation. Enrollment will not be allowed for a third repeat attempt. Courses numbered 500, 501, 502, 503, 504, 597, 598, 599, 600, 601, 603, 604, and 698 may be repeated but not for grade replacement.

See the College of Law (p. 306) section for the exception to this regulation applicable to students in that college.

E-6. Reports of Grades and Grade Corrections

Grades are reported to the registrar for all courses at the end of each academic session and at mid semester for undergraduate courses (see deadlines in the academic calendar (p. 11)). The assignment of grades and corrections of grades are the sole prerogative of the instructor and are reported by the instructor directly to the Registrar's Office via the U of I Faculty Web. All grades except 'I' and 'IP' (see regulation F (p. 75) and E-2) are considered final when assigned by an instructor at the end of a term. An instructor may request a grade correction when a computational or procedural error occurred in the original assignment of a grade. No final grade may be revised as a result of re-examination or the submission of additional work after the close of the semester. Grade corrections must be processed within one year of the end of the term for which the original grade was assigned. In the event the instructor leaves the university, the departmental administrator may assign the final grade.

F - Grades of Incomplete

F-1. Assigning of "Incomplete" Grades

A grade of "Incomplete" is assigned only when the student has been in attendance and has done passing work up to a time within three weeks of the close of the semester, or within one week of the close of the summer session. It may be assigned only upon agreement of the student and course instructor when extenuating circumstances make it impossible for the student to complete course requirements on time. (Extenuating circumstances include serious illness, car accidents, death of a family member, etc. It does not include lateness due to procrastination, the student's desire to do extra work to raise their grade, allowing a student to retake the course, etc.) Graduate students on probation, see College of Graduate Studies (<https://catalog.uidaho.edu/colleges-related-units/graduate-studies/#generalgraduateregulationstext>) section on Probation, Disqualification, and Reinstatement. If a grade of "Incomplete" is submitted, the instructor will assign a reversion grade in the event the missing work is not completed. The instructor must also specify to the student the conditions and requirements for completing the deficient work.

F-2. Completion of "Incomplete" Grades

Final grades for incompletes received in the Fall semester or Intercession must be assigned by the last day of the following Summer semester.

Final grades for incompletes received in the Spring semester or Summer Session must be assigned by the last day of the following Fall semester.

When a student has completed the deficient work, the instructor will assign a final grade. An incomplete that is not completed within the time limit specified above would automatically be changed to the reversion grade assigned by the instructor at the time the incomplete was submitted. Instructors may assign a final grade anytime within the time period specified above. In the event the instructor leaves the university, the departmental administrator may assign the final grade. An incomplete remains on the student's permanent record and is accompanied by the final grade (i.e. I/A, I/B, I/C).

F-3. "Incomplete" Grades on Record at End of Final Term

A student cannot graduate with a grade of "Incomplete" on their record. At the end of the term in which the student will graduate, a grade of "Incomplete" in any UI course on that degree level (undergraduate, graduate, law, etc.) reverts to the grade that the instructor had specified on the on-line grade roster (see F-1). Reverted grades are included in the computation of the student's cumulative grade-point average at graduation.

G - Withdrawal Procedures

G-1. Standard Withdrawals

G-1-a. A student may withdraw from the semester before the end of the second week following midterms. See regulation G-1-b for withdrawal from the semester after the end of the second week following midterms.

G-1-b. A student is permitted to withdraw from the semester after the end of the second week through one of the procedures outlined in G-2.

G-2. Semester Withdrawal Options

Students have three ways to withdraw from a semester that are outlined below.

G-2-a. General Semester Withdrawal

The process for semester withdrawals and single course withdrawals are managed through the Registrar's Office. More information can be found here (<http://www.uidaho.edu/registrar/registration/withdraw/>). Through this process, students can withdraw from individual courses or the full semester through VandalWeb provided that the withdrawal is not after a withdrawal deadline. Deadlines are published each semester on the Registrar's website and can be found here (<https://www.uidaho.edu/registrar/calendar/>). Students should check their account for any holds preventing the ability to add or drop classes. Students should also check with Financial Aid prior to adding or dropping courses to ensure either action will not affect their financial aid.

If a student needs to withdraw from a course or all courses after a deadline, the remaining types of withdrawal processes are available:

G-2-b. Hardship Withdrawal

The Dean of Students is authorized to approve or deny a student's request to withdraw from the semester when a student can demonstrate

a hardship. The Dean of Students will determine if the hardship prevents the student from continuing their academic courses and/or programs for the current semester. Examples of hardship include but are not limited to a medical or health emergency; death or illness of a loved one; or a demonstrated financial loss that cannot be remedied by Financial Aid.

Hardship Withdrawal Process

Students must apply for the hardship withdrawal in the same academic term in which the student is experiencing the hardship (see regulation G-2-c below for withdrawals not occurring during the current term). Students requesting a withdrawal from the University for hardship reasons will need to complete the Hardship Withdrawal Form located on the Dean of Students website (<https://www.uidaho.edu/student-affairs/dean-of-students/services/medical-withdrawal/>) and provide documentation for the withdrawal request. If the hardship is related to medical circumstances, medical documentation needs to be provided by an applicable healthcare provider. Students may wish to consult with Student Health Services, specifically the Counseling & Testing Center or the Vandal Health Clinic, if the student has not been previously working with a care provider.

Approved hardship withdrawals will withdraw the student from all academic coursework for the semester and cannot be applied to single courses. The student's transcript will reflect a "WU" for all courses in the semester in which a hardship withdrawal was requested and approved.

If the student's hardship withdrawal is approved, a credit or refund may occur based on date of withdrawal (See "Refund of Fees (<https://catalog.uidaho.edu/student-services/fees-expenses/>)")

The Dean of Students may, at their discretion, initiate a mandatory withdrawal for a student under exceptional circumstances and to the extent allowed by applicable law.

G-2-c. Retroactive Withdrawal/Academic Petition

Students seeking a withdrawal for a **prior** semester must submit an Academic Petition through their academic college. Students must contact the college dean's office of their major to engage in the petition process.

If the student's Academic Petition is approved and the approval would include a financial credit or refund, the Academic Petitions Committee will determine the effective date of the withdrawal. (See "Refund of Fees (<https://catalog.uidaho.edu/student-services/fees-expenses/>)").

G-3. Grades for Students Who Withdraw

A student who withdraws from or leaves UI without official approval will receive Fs in all courses in which the student is registered for and for which the grade has not already been assigned.

H - Final Examinations

H-1. Final Exam Scheduling

The last five days of each semester are scheduled as a final exam week (two-hour exams) in all divisions except the College of Law. The following provisions apply:

H-1-a. The Week Before Finals

No quizzes or exams may be given in lecture-recitation periods during the week before finals week. Exams in lab periods and in physical education

activity classes, final in-class essays in English composition classes, and final oral presentations in speech classes are permitted.

H-1-b. Approval of Schedule

Final exams or final class sessions are to be held in accordance with the schedule approved by the Faculty Council. Instructors may deviate from the schedule only on the recommendation of the college dean and prior approval by the provost or provost's designee.

H-1-c. Creation of Schedule

The final exam time will be scheduled based on the lecture portion of a course. The final exam time is based on the meeting schedule of the course section, as it exists in the class schedule for that semester. If a class meets Monday, Wednesday, and Friday, for example, the final exam time will be based on the time the class is scheduled to meet on these days. If the meeting day(s) and/or time of the lecture portion of a course change during the semester, the final exam time will be scheduled based on the first meeting time.

H-1-d. Exams for Multiple Courses or Sections

Where exams common to more than one course or section are required, they must be scheduled through the Registrar's Office and are regularly held in the evening.

H-1-e. Rescheduling for Excess Finals

Students with more than two finals in one day may have the excess final(s) rescheduled. Students who need to have a final rescheduled should make arrangements as early in the semester as possible, but no later than two weeks prior to the start of final examination week. Requests submitted after the deadline are left to the discretion of the instructors. If voluntary accommodation is not achieved, the instructor of the class with the lowest enrollment will offer an alternative exam. The rescheduled exam will take place during one of the designated conflict exam periods or as arranged with the course instructor.

H-1-f. Athletic Contests

Athletic contests are not to be scheduled during finals week.

H-2. Missed Final Exams

Students who miss final exams without valid reason receive 'F's in the exams. Students who are unavoidably absent from final exams are required to present evidence in writing to the instructor to prove that the absence is/was unavoidable.

H-3. Excused Final Exams

Instructors, with the concurrence of their departments, may excuse individual students from final exams when such students have a grade average in the course that will not be affected by the outcome of the final exam. In such instances, the grade earned before the final exam is to be assigned as the final grade.

H-4. Early Final Exams

Early final exams are permitted for students, on an individual basis, who clearly demonstrate in writing that the reasons for early final exams are compelling. Such requests require approval by the department and instructor of the course.

I - Alternative Credit Opportunities

I-1. Alternative Credit Opportunities

Students have the opportunity to earn undergraduate academic credit through Advanced Placement Examinations (AP), College Level Examination Program (CLEP), International Baccalaureate (IB), General Certificate of Education Examinations (A-Level), Global Assessment Certificate Examinations (GAC); DANTES Subject Standardized Tests (DSST); credit by examination, portfolio, technical competence, vertical course credit; and military courses (see regulation J-5-a (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>) for credit limitations).

Minimum scores needed to earn credit for AP, CLEP, IB, A-Level, or GAC examinations are available on the Registrar's website, www.uidaho.edu/registrar (<http://www.uidaho.edu/registrar/>).

I-2. Credit Opportunities While an Undergraduate Degree-Seeking Student at U of I

I-2-a. Challenged Courses (Credit by Examination)

Students may challenge U of I lecture and associated laboratory courses (earn credit by examination) as follows:

1. Students must receive permission from the course instructor, from the administrator of the department in which the course is offered, and from their academic dean to challenge a course. Applications to challenge a course are available on the Registrar's website. The application must be signed and the application fee paid to the Student Accounts/Cashiers Office (see Special Fees (p. 57) for extramural credits). The form is then returned to the Registrar's Office. The registrar checks the student's record to confirm if the student is eligible to challenge the course and notifies the instructor or student accordingly.
2. Students must score 'C' or higher to pass and obtain credit. A passing grade is entered as 'P' and is not included in grade-point computations. The student's account will be charged the appropriate per-credit fee at the time the credits are recorded on the student's transcript (see Special Fees (p. 57) for extramural credits). If a student does not meet these standards, no entry is made on their record and no per-credit fee is charged to their account.
3. Results of the challenged courses must be forwarded to the registrar no later than the beginning of the last week of the semester.
4. No examinations under this regulation may be conducted during the last two weeks of any academic session.
5. Students are not permitted to challenge a prerequisite course after having completed the advanced course.

I-2-b. Experiential Learning Portfolio

With the approval of an ad hoc committee consisting of representatives from the colleges and departments involved, an undergraduate may be awarded credit in a specific undergraduate-level course in recognition of university-level knowledge or competence acquired from work experiences, community and volunteer extension courses, and participation in informal courses and in-service training sponsored by associations, business, government, and industry. Requests for such credit must be approved by the student's departmental administrator and academic dean, and must be supported by such evidence as is needed

to provide a sound basis for evaluating the student's achievements. Credits granted under this regulation are assigned a grade of P. Credit will be awarded at the undergraduate level based on demonstrated learning outcomes within the subject, course, or programs offered by the university. Forms for experiential learning portfolio credit are available on the Registrar's website, www.uidaho.edu/registrar/ (<http://www.uidaho.edu/registrar/>).

I-2-c. Technical Competency Credit

Technical competency credits may be gained from experience in areas of concentration related to a bachelor's degree in industrial technology. Grades of 'P' for the successful completion of INDT 407 are normally recorded on a student's transcript during their last semester or upon completion of all degree requirements. A maximum of 24 credits may be earned in INDT 407. Applications and instructions for technical competency credits are available at the Department of Curriculum and Instruction (see Special Fees (p. 57) for extramural credits).

I-2-d. Vertically Related Course Credit

Undergraduate degree-seeking students may bypass an elementary course and enroll in a higher vertically related course. Students with a 'C' or better in the advanced course are eligible to receive credit and a grade of 'P' for the lower vertically related courses in the same subject matter. Vertically related courses are listed at the beginning of each

subject in the course descriptions section. Applications to receive credit for vertically related courses are available on the Registrar's website, www.uidaho.edu/registrar/ (<http://www.uidaho.edu/registrar/>) (see Special Fees (p. 57) for extramural credits).

Note: Advisors should make sure that students are aware of this opportunity for obtaining credit.

I-2-e. Military Courses

Students who have served in the armed forces may receive credit based upon completed military courses recorded on their official Joint Services Transcript (JST). Evaluations for the granting of credit for military courses are based on the recommendations in the American Council of Education (ACE) guide.

I-3. Vertically Related Course Credit for Transfer Students

Students who have completed courses at other institutions after bypassing lower vertically related courses, but have not been awarded credit for those bypassed courses, may receive credit for vertically related course(s) by following I-2-d.

J - General Requirements for Undergraduate Degrees

Candidates for undergraduate degrees must fulfill the following requirements. (See the College of Graduate Studies (p. 292) section for the requirements for graduate degrees. See the College of Law (p. 304) section for the requirements for the degree of Juris Doctor.)

J-1. Credit Requirements

J-1-a. Minimum Credits for Baccalaureate Degrees

Students must have earned a minimum of 120 credits to be granted a baccalaureate degree and a minimum of 60 credits to be granted an associate degree from the University of Idaho. Some programs require a higher minimum. For the minimum number of credits required in each degree program, see the major curricula of the various degree-granting units in the individual departmental section.

J-1-b. Minimum Upper-Division Credits for Baccalaureate Degrees

A minimum of 36 credits in upper-division courses (numbered 300 or above) is required for a baccalaureate degree.

J-1-c. Up to 6 credits of institutional coursework numbered 400 or higher, with a grade of B or higher, used towards a baccalaureate degree may also be used towards a graduate degree with the approval of the student's major professor.

J-2. Residency Requirements

A baccalaureate student must earn a minimum of 30 upper-division credits in UI courses. An associate student must earn a minimum of 15 credits in UI courses. No credits awarded for alternative credit opportunities (see regulation I (<https://catalog.uidaho.edu/general-requirements-academic-procedures/i-alternative-credit-opportunities/>)) or non-U of I sponsored independent study courses can be counted among these UI credits. Study abroad and student exchange credits may be counted toward this requirement with prior approval by the student's academic department and dean.

J-3. General Education Curriculum and Learning Outcomes

First-year baccalaureate and associate degree-seeking students (see Admissions Status) are to complete the University of Idaho General Education curriculum. A university education is a preparation both for living and for making a living. It offers an opportunity not only to lay the foundations of a career, but also to develop the mind to its highest potential, to cultivate the imagination as well as the power to reason, and to gain the intellectual curiosity that makes education a life-long enterprise. See the University Learning Outcomes (<https://catalog.uidaho.edu/university/learning-outcomes/>) for more information.

A student working toward a baccalaureate or associate degree must complete the necessary coursework in the seven categories described below (J-3-a through J-3-g). This requirement is to be satisfied by earning a total of 36 credits and meeting the minimum number of credits specified for each category. (Transfer students have two options for fulfilling this requirement; these are described under "General Education Requirements for Transfer Students (<https://catalog.uidaho.edu/student-services/admission/>)" in the Undergraduate Admission section of this catalog). University of Idaho general education courses accepted as transferable as general education courses to other Idaho state-funded institutions are listed as General

Education Matriculated - (GEM) courses in the General Catalog. Courses that fulfill requirements in each category are reviewed each year and the list is updated in the Spring. Students and advisors are encouraged to check the list when it is published in the spring to be aware of any additional courses that have been added to meet specific requirements. Courses that are approved to satisfy a general education requirement can be used to satisfy those requirements even if the course is completed prior to being approved as a general education course.

Note: Remedial courses may not be used to satisfy any of this requirement. Degree-seeking students must be enrolled in ENGL 101, ENGL 101P, or ENGL 102 in their first semester in residence and in each subsequent semester until they have passed ENGL 102. They must also be enrolled in MATH 108 or in a course that meets the general education requirement in mathematics, statistics, or computer science in their first year in residence and in each subsequent semester until the general education requirement in mathematics, statistics, or computer science has been satisfied.

J-3-a. Written Communication (3-6 credits, depending on placement)

The purpose of this requirement is to develop the ability to organize one's thoughts; to express them simply and clearly through oral, written, and visual means; to observe the standards and conventions of language usage; and to suit tone to audience. The requirement is proficiency in written English equal to that needed for the completion of ENGL 102.

1. To fulfill this requirement, students must complete ENGL 101 or ENGL 101P and ENGL 102 and attain satisfactory scores for both courses. The following specific provisions apply to the English composition component:
 - a. Based on placement, a student may be required to take up to 6 credits to satisfy this requirement. Students are provisionally placed in a required English composition course based on their SAT Verbal and/or ACT English scores. The University of Idaho offers an additional placement tool, the Write Class UIIdaho: www.writeclassuidaho.com (<http://www.writeclassuidaho.com>)
 - b. Students who attain a satisfactory score on the College Board English Achievement or Scholastic Aptitude (Verbal) Test or the American College Testing (ACT) English Test will be awarded credit and grades of P for ENGL 101 or ENGL 101P and ENGL 102. Additionally, students who attain a score of 4 on the Advanced Placement Test in English will be awarded credit and a grade of P for ENGL 101 or ENGL 101P and students who attain a score of 5 on the Advanced Placement Test in English will be awarded credit and grades of P for ENGL 101 or ENGL 101P and ENGL 102.

U of I accepts credits earned in comparable writing courses taken at other accredited institutions (see credit limitation in J-5-d).

J-3-b. Oral Communication (2-3 credits)

Students who receive a passing grade in one of the following courses are expected to meet the proficiencies for Oral Communication courses contained in Section III-N of the Idaho State Board of Education Governing Policies and Procedures. Students should be able to demonstrate basic competency in the following areas:

1. organization and preparation,
2. oral language use and presentation, and
3. addressing audience needs and interests.

Code	Title	Hours
AGED 101	Verbal Communication in Agriculture, Food, and Natural Resources	3
COMM 101	Fundamentals of Oral Communication	3
COMM 150	Online Oral Communication	3
PHIL 102	Reason and Rhetoric	2

J-3-c. Scientific Ways of Knowing (8 credits, from two different disciplines, which include two accompanying labs OR 7 credits which includes a Core Science (CORS) course and one course with lab)

The purpose of this requirement is to develop a better understanding of the physical and biological world by learning some of the principles that explain the natural phenomena of the universe, the experimental method used to derive those principles, and their applications.

Study in this area is undertaken as part of the general education requirements in order to promote scientific literacy, that is, the ability to read and understand the science issues being debated in society. Scientific literacy is essential if citizens are to make informed judgments on the wide range of issues that affect their everyday lives. Students receiving passing grades in the natural and applied science courses of the general education curriculum will demonstrate competency in the following areas:

1. knowledge of scientific principles;
2. the ability to write clearly and concisely using the style appropriate to the sciences;
3. the ability to interpret scientific data;
4. the ability to analyze experimental design critically; and
5. the development of laboratory skills.

Code	Title	Hours
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	4
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	5
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	4
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CORS 205-297		3
CORS 217	Exploring the Solar System	
CORS 231	Fish and Wildlife in a Changing World	
CORS 232	Science on Your Plate: Food Safety, Risks and Technology	
CORS 234	The Science of Engineering and Technology in the Modern World	
CORS 236	Science for Non-Scientists	
CORS 237	Earth Science in the Movies	
CORS 254	Our National Parks	
CORS 255	Concepts In Human Nutrition	
ENVS 101 & ENVS 102	Introduction to Environmental Science and Field Activities in Environmental Sciences	4
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	4
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	4
GEOL 102 & 102L	Historical Geology and Historical Geology Lab	4
GEOL 212	Dinosaurs and Prehistoric Life	4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	4
PHYS 103 & PHYS 104	General Astronomy and Astronomy Lab	4
PHYS 111 & 111L	General Physics I and General Physics I Lab	4
PHYS 112 & 112L	General Physics II and General Physics II Lab	4
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	4
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	4

J-3-d. Mathematical Ways of Knowing (3 credits)

These courses develop analytical, quantitative, and problem solving skills by involving students in doing mathematics, statistics, or computer science and by focusing on understanding the concepts of these disciplines.

Students receiving passing grades in mathematics, statistics, or computer science will have the ability to recognize, analyze, and solve problems.

Code	Title	Hours
CS 112	Computational Thinking and Problem Solving	3
MATH 123	Math in Modern Society	3
MATH 143	College Algebra	3
MATH 153	Introduction to Statistical Reasoning	3
MATH 160	Survey of Calculus	4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
STAT 153	Introduction to Statistical Reasoning	3
STAT 251	Statistical Methods	3

J-3-e. Humanistic and Artistic Ways of Knowing (6 credits, from two different disciplines) and Social and Behavioral Ways of Knowing (6 credits, from two different disciplines)

The purpose of these liberal arts courses is to provide students with critical tools for understanding the human experience and providing the means for students to respond to the world around them.

Humanistic and Artistic Ways of Knowing courses enable students to reflect upon their lives and ask fundamental questions of value, purpose, and meaning in a rigorous and systematic interpretative manner, with the goal of fostering understanding of culture and inspiring a citizenry that is more literate, respectful of diverse viewpoints, and intellectually inquisitive.

Social and Behavioral Ways of Knowing courses enable students to apply rigorous analytic skills for the purpose of explaining the dynamic interaction among history, institutions, society, and ideas that shape the behaviors of individuals, communities, and societies. With these skills, students can critically address the social issues of our contemporary world.

Some courses on the humanities and social science lists may also satisfy the American diversity or international requirement.

Approved Humanistic and Artistic Ways of Knowing Courses:

Code	Title	Hours
AGED 263	History of U.S. and World Agriculture	3
AMST 301	Studies in American Culture	3
ARCH 151	Introduction to the Built Environment	3
ART 100	Introduction to Art: Why Art Matters	3
ART 205	Visual Culture	3
ART 213	History and Theory of Modern Design	3
ART 302	Modern Art and Theory	3
ART 407	New Media	3
CHIN 101	Elementary Chinese I	4
CHIN 102	Elementary Chinese II	4
DAN 100	Dance in Society	3
ENGL 175	Literature and Ideas	3
ENGL 257	Survey of Western World Literature I	3
ENGL 258	Survey of Western World Literature II	3
ENGL 267	Survey of British Literature I	3
ENGL 268	Survey of British Literature II	3
ENGL 277	Survey of American Literature I	3
ENGL 278	Survey of American Literature II	3
ENGL 290	Introduction to Creative Writing	3
ENGL 322	Climate Change Fiction	3
ENGL 345	Shakespeare	3
FLEN 210	Introduction to Classic Mythology	3
FLEN 243	English Word Origins	3
FLEN 313	French/Francophone Literature in Translation	3
FLEN 324	Topics in German Literature in Translation	3
FLEN 331	Japanese Anime	3

FLEN 391	Hispanic Film	3
FLEN 394	Latin American Literature in Translation	3
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FTV 100	Film History and Aesthetics	3
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
HIST 270	Introduction to Greek and Roman Civilization	3
HIST 357	Women in Pre-Modern European History	3
HIST 379	History of Science II: 1700-Present	3
HIST 414	History and Film	3
HIST 442	The Medieval Church: Europe in the Early and High Middle Ages	3
HIST 443	The Medieval State: Europe in the High and Late Middle Ages	3
HIST 445	Medieval English Constitutional and Legal History: 1066-1485	3
HIST 447	The Renaissance	3
HIST 448	The Reformation	3
HIST 485	Chinese Social and Cultural History	3
IS 370	African Community, Culture, and Music	1-3
JAPN 101	Elementary Japanese I	4
JAPN 102	Elementary Japanese II	4
LAS 391	Hispanic Film	3
LAS 394	Latin American Literature in Translation	3
MUSH 104	Jazz: An African American Art Form	3
MUSH 106	Women in American Popular Music	3
MUSH 108	Music of the World	3
MUSH 111	Introduction to the World of Music	3
MUSH 201	History of Rock and Roll	3
MUSI 100	Introduction to Music	3
AIST 101	Elementary Nez Perce I	4
AIST 102	Elementary Nez Perce II	4
PHIL 103	Introduction to Ethics	3
PHIL 200	Philosophy of Alcohol	3
PHIL 201	Critical Thinking	3
PHIL 208	Business Ethics	3
PHIL 240	Belief and Reality	3
PHIL 351	Philosophy of Science	3
PHIL 361	Professional Ethics	3
RELS 443	The Medieval State: Europe in the High and Late Middle Ages	3
RELS 448	The Reformation	3
RSTM 106	Introduction to Sport Management	3
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
THE 101	Introduction to the Theatre	3
THE 468	Theatre History I	3
THE 469	Theatre History II	3
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	3

Approved Social and Behavioral Ways of Knowing Courses:

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
ANTH 101	Biological Anthropology	3
ANTH 102	Cultural Anthropology	3

ANTH 261	Language and Culture	3
ANTH 329	Contemporary North American Indians	3
ANTH 350	Food, Culture, and Society	3
ANTH 462	Human Issues in International Development	3
COMM 233	Interpersonal Communication	3
COMM 335	Intercultural Communication	3
COMM 410	Conflict Management	3
CRIM 101	Introduction to Criminology	3
CRIM 336	Comparative Criminal Justice Systems	3
CRIM 439	Inequalities in the Justice System	3
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
ECON 272	Foundations of Economic Analysis	4
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
FLEN 270	Introduction to Greek and Roman Civilization	3
FLEN 307	Institutions of the European Union	3
FOR 235	Society and Natural Resources	3
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
GEOG 260	Introduction to Geopolitics	3
GEOG 365	Geopolitics and Conflict	3
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 180	Introduction to East Asian History	3
HIST 315	Comparative African-American Cultures	3
HIST 380	Disease and Culture: History of Western Medicine	3
HIST 420	History of Women in American Society	3
HIST 424	American Environmental History	3
HIST 430	U.S. Diplomatic History	3
HIST 438	Modern Mexico and the Americas	3
HIST 439	Modern Latin America	3
HIST 440	Social Revolution in Latin America	3
HIST 441	Slavery and Freedom in the Americas	3
HIST 452	Europe in the Age of the Revolution, 1770-1880	3
HIST 454	Pictures and Power: Photography, Politics, and American History	3
HIST 456	Anti-Semitism and the Holocaust	3
HIST 457	History of the Middle East	3
HIST 460	Conspiracies and Secret Societies in History	3
HIST 461	Idaho and the Pacific Northwest	3
HIST 462	History of the American West	3
HIST 466	Eastern Europe Since 1774	3
HIST 467	Russia to 1894	3
HIST 468	Russia and Soviet Union Since 1894	3
HIST 482	Japan, 1600 to Present	3
HIST 484	Modern China, 1840s to Present	3
IS 325	The Contemporary Muslim World	3
IS 326	Africa Today	3
IS 350	Sports and International Affairs	3
JAMM 100	Media and Society	3

LAS 462	Human Issues in International Development	3
MKTG 321	Marketing	3
NRS 125	Introduction to Conservation and Natural Resources	3
NRS 235	Society and Natural Resources	3
POLS 101	American National Government	3
POLS 205	Introduction to Comparative Politics	3
POLS 237	Introduction to International Politics	3
POLS 307	Institutions of the European Union	3
POLS 331	American Political Parties and Elections	3
POLS 332	American Congress	3
POLS 333	American Political Culture	3
POLS 338	American Foreign Policy	3
POLS 381	European Politics	3
PSYC 101	Introduction to Psychology	3
RSTM 104	Recreation, Sport, and Tourism in Healthy Communities	3
RSTM 380	Principles of Travel and Tourism	3
SOC 101	Introduction to Sociology	3
SOC 230	Social Problems	3
SOC 350	Food, Culture, and Society	3

J-3-f. One American Diversity course and One International course (Or an approved study abroad experience)

As we live in an increasingly diverse and multicultural world, the purpose of these courses is to prepare students to understand, communicate, and collaborate with those from diverse communities within the United States and throughout the world.

The American diversity courses seek to increase awareness of contemporary and historical issues surrounding the social and cultural diversity in the U.S. Students engage in critical thinking and inquiry into the issues, complexities, and implications of diversity, and how social, economic, and/or political forces have shaped American communities. Diversity includes such characteristics as ability, age, ethnicity, gender, race, religion, sexual orientation, and socioeconomic status.

One course chosen from the approved American diversity courses listed below is required. If a student takes a General Education course in another category that also appears on the list of approved American diversity courses, then this requirement is considered to be completed.

The international courses seek to develop an understanding of international values, belief systems, and social issues that have contributed to current balances of power and cultural relations. Students develop an understanding of the roles that the United States and other countries have played in global relations and the ways cultures have interacted and influenced each other.

One course chosen from the approved international courses listed below is required. If a student takes a General Education course in another category that also appears on the list of approved international courses, then this requirement is considered to be completed. The international requirement may be waived if a student successfully completes an approved Summer, Fall, or Spring program abroad through the International Programs Office.

Approved American Diversity Courses:

Code	Title	Hours
AIST 320	Native American & Indigenous Film	3
AIST 411	Native American Architecture	3
AIST 422	Contemporary Pacific Northwest Indians	3
AIST 484	Native American and Indigenous Literature	3
AMST 301	Studies in American Culture	3
ANTH 329	Contemporary North American Indians	3
ANTH 350	Food, Culture, and Society	3
ANTH 422	Contemporary Pacific Northwest Indians	3
ARCH 411	Native American Architecture	3
COMM 432	Gender and Communication	3
CORS 232	Science on Your Plate: Food Safety, Risks and Technology	3
CRIM 439	Inequalities in the Justice System	3
DAN 100	Dance in Society	3
EDCI 302	Teaching Culturally Diverse Learners	3

ENGL 380	U.S. Ethnic Literature	3
ENGL 384	Native American and Indigenous Literature	3
ENGL 402	Internship in Tutoring Writing	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 316	American Indian History	3
HIST 414	History and Film	3
HIST 420	History of Women in American Society	3
HIST 424	American Environmental History	3
HIST 454	Pictures and Power: Photography, Politics, and American History	3
HIST 461	Idaho and the Pacific Northwest	3
HIST 462	History of the American West	3
IAD 443	Universal Design	3
JAMM 340	Media and Diversity	3
JAMM 441	(s)Adv Concepts Media/Diversity	3
JAMM 445	History of Mass Media	3
MUSH 104	Jazz: An African American Art Form	3
MUSH 106	Women in American Popular Music	3
MUSH 410	Studies in Jazz History	3
MUSI 100	Introduction to Music	3
POLS 101	American National Government	3
POLS 333	American Political Culture	3
POLS 468	Civil Liberties	3
PSYC 315	Psychology of Women	3
PSYC 419	Adult Development and Aging	3
RELS 422	Contemporary Pacific Northwest Indians	3
RSTM 106	Introduction to Sport Management	3
SOC 201	Introduction to Inequity and Justice	3
SOC 350	Food, Culture, and Society	3
SPAN 411	Chicano and Latino Literature	3
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	3

Approved International Courses:

Code	Title	Hours
AGEC 447	International Development Economics	3
AGEC 481	Agricultural Markets in a Global Economy	3
AGED 406	Exploring International Agriculture	3
ANTH 102	Cultural Anthropology	3
ANTH 261	Language and Culture	3
ANTH 462	Human Issues in International Development	3
ART 100	Introduction to Art: Why Art Matters	3
ART 213	History and Theory of Modern Design	3
ART 302	Modern Art and Theory	3
ART 303	Contemporary Art and Theory	3
CHIN 101	Elementary Chinese I	4
CHIN 102	Elementary Chinese II	4
CHIN 201	Intermediate Chinese I	4
CHIN 202	Intermediate Chinese II	4
COMM 335	Intercultural Communication	3
CRIM 336	Comparative Criminal Justice Systems	3
ECON 446	International Economics	3
ECON 447	International Development Economics	3

ENVS 225	International Environmental Issues Seminar	3
FLEN 307	Institutions of the European Union	3
FLEN 313	French/Francophone Literature in Translation	3
FLEN 315	French/Francophone Cinema in Translation	3
FLEN 324	Topics in German Literature in Translation	3
FLEN 331	Japanese Anime	3
FLEN 391	Hispanic Film	3
FLEN 394	Latin American Literature in Translation	3
FN 450	Global Nutrition	3
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
FREN 301	Advanced French Grammar	3
FREN 302	Advanced French Writing Skills	3
FREN 304	Connecting French Language and Culture	3
FREN 307	French Phonetics	3
FREN 308	Advanced French Conversation	3
FREN 407	French & Francophone Literatures	3
FREN 408	French and Francophone Culture and Institutions	3
FTV 200	Global Film Styles	3
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
GEOG 260	Introduction to Geopolitics	3
GEOG 350	Sustainability of Global Development	3-4
GEOG 360	Population Dynamics and Distribution	3-4
GEOG 365	Geopolitics and Conflict	3
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
GERM 301	German Reading and Writing	3
GERM 302	German Listening and Speaking	3
GERM 420	Topics in German Culture & Literature - Themes	3
GERM 440	German Media	3
HIST 101	World History I	3
HIST 102	World History II	3
HIST 180	Introduction to East Asian History	3
HIST 270	Introduction to Greek and Roman Civilization	3
HIST 315	Comparative African-American Cultures	3
HIST 357	Women in Pre-Modern European History	3
HIST 371	History of England	3
HIST 372	History of England	3
HIST 379	History of Science II: 1700-Present	3
HIST 380	Disease and Culture: History of Western Medicine	3
HIST 430	U.S. Diplomatic History	3
HIST 438	Modern Mexico and the Americas	3
HIST 439	Modern Latin America	3
HIST 440	Social Revolution in Latin America	3
HIST 441	Slavery and Freedom in the Americas	3
HIST 442	The Medieval Church: Europe in the Early and High Middle Ages	3
HIST 443	The Medieval State: Europe in the High and Late Middle Ages	3

HIST 445	Medieval English Constitutional and Legal History: 1066-1485	3
HIST 447	The Renaissance	3
HIST 448	The Reformation	3
HIST 452	Europe in the Age of the Revolution, 1770-1880	3
HIST 456	Anti-Semitism and the Holocaust	3
HIST 457	History of the Middle East	3
HIST 460	Conspiracies and Secret Societies in History	3
HIST 466	Eastern Europe Since 1774	3
HIST 467	Russia to 1894	3
HIST 468	Russia and Soviet Union Since 1894	3
HIST 482	Japan, 1600 to Present	3
HIST 484	Modern China, 1840s to Present	3
HIST 485	Chinese Social and Cultural History	3
IAD 281	History of Interiors I	3
IAD 282	History of Interiors II	3
IS 225	International Environmental Issues Seminar	3
IS 325	The Contemporary Muslim World	3
IS 326	Africa Today	3
IS 350	Sports and International Affairs	3
IS 370	African Community, Culture, and Music	1-3
JAMM 490	Issues in Global Media	3
JAPN 101	Elementary Japanese I	4
JAPN 102	Elementary Japanese II	4
JAPN 201	Intermediate Japanese I	4
JAPN 202	Intermediate Japanese II	4
JAPN 301	Japanese Reading and Writing	3
JAPN 303	Japanese Listening and Speaking	3
LARC 390	Italian Hill Towns and Urban Centers	3
LARC 491	Italian Hill Towns and Urban Centers	3
LAS 306	Culture and Institutions of Latin America	3
LAS 391	Hispanic Film	3
LAS 394	Latin American Literature in Translation	3
LAS 409	Modern Latin American Society	3
LAS 413	Spanish American Short Fiction	3
LAS 422	Mexican Culture through Cinema	3
LAS 438	Modern Mexico and the Americas	3
LAS 439	Modern Latin America	3
LAS 441	Slavery and Freedom in the Americas	3
LAS 462	Human Issues in International Development	3
MUSH 108	Music of the World	3
MUSH 111	Introduction to the World of Music	3
MUSH 420	Studies in World Music	3
POLS 205	Introduction to Comparative Politics	3
POLS 237	Introduction to International Politics	3
POLS 307	Institutions of the European Union	3
POLS 338	American Foreign Policy	3
POLS 381	European Politics	3
POLS 385	Political Psychology	3
POLS 420	Introduction to Asian Politics	3
POLS 449	World Politics and War	3
POLS 480	Politics of Development	3
POLS 487	Political Violence and Revolution	3

RSTM 380	Principles of Travel and Tourism	3
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
SPAN 301	Advanced Grammar	3
SPAN 302	Advanced Composition	3
SPAN 303	Spanish Conversation	3
SPAN 305	Culture and Institutions of Spain	3
SPAN 306	Culture and Institutions of Latin America	3
SPAN 308	Proficiency in Reading	3
SPAN 310	Spanish for the Professions I	3
SPAN 401	Readings: Spanish Literature	3
SPAN 402	Readings: Spanish American Literature	3
SPAN 409	Modern Latin American Society	3
SPAN 412	Spanish Short Fiction	3
SPAN 413	Spanish American Short Fiction	3
SPAN 419	Latin America Theatre Through Literature	3
SPAN 420	Modern Spanish Theatre Through Literature	3
SPAN 421	Bilingual and Bicultural Identities	3
SPAN 422	Mexican Culture through Cinema	3
SPAN 423	Culture and Identity in Spanish Cinema	3

J-3-g. Capstone Experience

One course chosen from the approved Capstone Experience courses listed below.

Approved Capstone Experience Courses:

Code	Title	Hours
AGEC 478	Advanced Agribusiness Management	3
AGED 471	Senior Capstone in Agricultural Education	2
AGED 498	Internship (Max 10 credits)	1-10
ANTH 455	Anthropology Senior Research	3
ARCH 454	Architectural Design: Vertical Studio	6
ART 410	Professional Practices	2
ART 490	BFA Art/Design Studio	6
ART 495	Critical Art Writing Seminar	3
AVS 450	Issues in Animal Agriculture	2
BE 478	Engineering Design I	3
BE 479	Engineering Design II	3
BE 491	Senior Seminar	1
BIOL 401	Undergraduate Research	1-4
BIOL 407	Practicum in Biology Laboratory Teaching	2-6
BIOL 408	Human Anatomy and Physiology Laboratory Pedagogy	2-4
BIOL 411	Senior Capstone	2
BIOL 425	Experimental Field Ecology	3
BUS 490	Strategic Management	3
CE 494	Senior Design II	3
CHE 452	Environmental Management and Design	1-16
CHE 454	Process Analysis and Design II	3
CHEM 409	Proseminar	1
COMM 453	Communication Theory	3
CRIM 461	Capstone: Justice Policy Issues	3
CRIM 462	Senior Practicum	3

CRIM 464	Criminology Abroad	3
CS 481	CS Senior Capstone Design II	3
CYB 481	Cybersecurity Senior Capstone Design II	3
DAN 490	Senior Project	2
ECE 481	EE Senior Design II	3
ECE 483	Computer Engineering Senior Design II	3
ECON 490	Economic Theory and Policy	3
ENGL 440	Professional Writing Portfolio	3
ENGL 490	Creative & Literary Portfolio	3
EDCI 401	Internship Seminar	1
EDCI 485	Secondary Internship	15
ENT 438	Pesticides in the Environment	3
ENVS 497	Senior Research	2-4
HDFS 401	Professional Ethics and Practice in CFCS	1
FN 492	Nutrition Education	3
ECDE 497	INTERN: Preschool	1-16
FISH 418	Fisheries Management	4
FISH 473	ECB Senior Presentation	1
FISH 495	Fisheries Seminar	1
FL 401	SGS Capstone Experience	1
FOR 424	Silviculture Principles and Practices	4
FIRE 427	Prescribed Burning Lab	3
FOR 473	ECB Senior Presentation	1
FOR 490	The Resilient Landscape	3
FS 489	Food Product Development	3
FSP 473	ECB Senior Presentation	1
FSP 495	Product Development and Brand Management	3
FTV 476	Advanced Filmmaking II	3
GEOG 493	Senior Capstone in Geography	3
GEOL 490	Geology Field Camp	3
HIST 495	History Senior Seminar	3
IAD 452	Interior Architecture and Design VI	6
INDT 484	Industrial Technology Capstone I	3
INTR 401	Career and Leadership Development	2
INTR 440	Honors Presentations	1
INTR 454	Honors Thesis or Portfolio	3
IS 495	International Studies Senior Seminar	3
JAMM 448	Law of Mass Media	3
LARC 480	The Resilient Landscape	3
MATH 415	Cryptography	3
MATH 437	Mathematical Biology	3
ME 424	Mechanical Systems Design I	3
ME 426	Mechanical Systems Design II	3
MKTG 495	Product Development and Brand Management	3
MSE 454	Process Analysis and Design II	3
MUSA 490	Half Recital	0
MUSA 491	Recital	0
MUSC 490	Senior Recital	0
MUST 432	Practicum: Music Teaching	11
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
NRS 473	ECB Senior Presentation	1
NRS 476	Environmental Project Management and Decision Making	4

ORGS 410	Capstone Project in Organizational Sciences	1-6
PEP 495	Practicum	1
PEP 498	Internship in Exercise Science & Health	1-16
PHIL 490	Senior Seminar	3
PHYS 492	Senior Research	1
PLSC 438	Pesticides in the Environment	3
POLS 490	Senior Experience	3
PSYC 415	History and Systems of Psychology	3
REM 456	Integrated Rangeland Management	3
REM 473	ECB Senior Presentation	1
RSTM 498	Internship in Recreation, Sport, and Tourism	1-16
SOC 460	Capstone: Sociology in Action	3
SOC 462	Senior Practicum	3
SOIL 427	Sustainable Food Systems	3
STAT 436	Applied Regression Modeling	3
THE 483	Senior Capstone Project	1
VTD 457	Capstone Design Studio I	6
WLF 473	ECB Senior Presentation	1
WLF 492	Wildlife Management	4

J-4. Grade Requirements

To qualify for an undergraduate degree, a candidate must have a UI grade-point average of 2.00 or better. See exceptions under E-4 and E-5 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/e-grades/>).

J-5. Credit Limitations

A candidate may count toward an undergraduate degree no more than:

J-5-a. Thirty credits earned in Experiential Learning and Technical Competency for a baccalaureate degree and fifteen credits for an associate degree (see regulation I-2-b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/i-alternative-credit-opportunities/>) and I-2-c (<https://catalog.uidaho.edu/general-requirements-academic-procedures/i-alternative-credit-opportunities/>)).

J-5-b. Twelve credits earned under the pass-fail option for a baccalaureate degree and six credits for an associate degree (see regulation B-11 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/b-registration/>)).

J-5-c. Zero credits in remedial-level courses.

J-5-d. Zero credits earned in Professional Development courses.

J-6. Assignment of Curricular Requirements (Catalog Issue)

In addition to fulfilling the general university requirements for degrees, candidates for baccalaureate or associate degrees must satisfy the particular requirements specified for their curricula. The pertinent requirements are those contained in the most recent U of I catalog issue that was in effect at the time of, or subsequent to, the candidate's initial enrollment as a degree-seeking student at U of I. The earliest catalog issue available to students re-admitted as a degree-seeking student at the U of I is the most recent catalog at the time of re-enrollment. A catalog issue is valid for a maximum of seven years from its effective date. The effective date of a catalog issue is the first Monday following spring graduation.

J-7. Concurrent and Subsequent Baccalaureate Degrees

J-7-a. Concurrent Degrees

A student may concurrently pursue degrees in one or more colleges. For exceptions to this rule, see general studies in part 4. In addition to the university requirements, students must fulfill the departmental and college requirements for all degrees.

J-7-b. Subsequent Degrees

Students who have earned a baccalaureate degree and who wish to complete the requirements for a subsequent degree must earn at least 15 credits as an undergraduate student after completion of the previous baccalaureate degree, and they must fulfill the university, departmental, and college requirements for the second degree. For exceptions to this regulation, see general studies in part 4.

J-8. Degree with Double Major

Students may complete two different majors (curricula) offered under a particular baccalaureate degree and have both majors shown on their academic records and diplomas, e.g., Bachelor of Arts with majors in history and political science. In addition to the university requirements, students must fulfill the departmental and college requirements for all majors. Each of the majors must lead to the same degree. When majors leading to different degrees are involved, see the requirements applicable to the awarding of a concurrent baccalaureate degree (J-7-a).

J-9. Academic Minors

J-9-a. Academic Minors

An academic minor is a prescribed course of study consisting of 18 or more credits which supplements an undergraduate major at the University of Idaho. For descriptions of minor curricula, see the programs of the degree-granting units in the individual departmental section. In the following paragraphs of J-9, "minor" denotes "academic minor," which is to be distinguished from "teaching minor"; for information on the latter, see the Department of Curriculum and Instruction (p. 205) section.

J-9-b. Multiple Minors

A baccalaureate degree seeking student may pursue one or more minors in addition to a major by filing with the registrar a declaration of intention to do so. Completion of a minor is required only if specified by the degree-granting unit, but any minor completed is recorded on the student's academic record.

J-9-c. Transfer Credit

Transfer credits may be applied to a minor; however, at least 9 credits of those completing the minor's requirements must be in UI courses. Similar to the residency requirements for a baccalaureate degree in J-2, no credits awarded for non-U of I sponsored independent study courses, bypassed courses (see I-2-d (<https://catalog.uidaho.edu/general-requirements-academic-procedures/i-alternative-credit-opportunities/>)), credit by examination (see I-1-a, I-1-c, or I-2-a (<https://catalog.uidaho.edu/general-requirements-academic-procedures/i-alternative-credit-opportunities/>)), College Level Examination Program (CLEP – see I-2-b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/i-alternative-credit-opportunities/>)), or experiential learning (see I-2-b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/i-alternative-credit-opportunities/>))) can be counted among these 9 UI credits. Study abroad and student exchange credits may be counted toward this requirement with prior approval by the student's academic department and dean.

J-9-d. Minor-Only

A student may complete an undergraduate minor even though they have already earned a baccalaureate degree at the University of Idaho. If the sole objective is to complete an undergraduate minor, the student should declare a "Minor-Only" curriculum in the department offering the minor. Students who declare a minor-only curriculum are not eligible for financial aid funds (see the Student Financial Aid Services (p. 38) section).

K - Academic Honors

K-1. Graduation with Honors

Candidates for baccalaureate degrees are graduated with honors if they have earned at least 56 credits in U of I courses and meet the cumulative U of I grade-point average as specified in K-1-a, K-1-b, or K-1-c. No credits earned through bypassed courses, credit by examination, experiential learning, or technical competence may be counted among these 56 credits.

Candidates for the degree of Juris Doctor are graduated with honors under the same conditions as described in K-1-a, K-1-b, or K-1-c, except the grade-point average considered is based exclusively on the student's record in the College of Law. Honors are not awarded with degrees earned through the College of Graduate Studies.

Note: Graduation with honors is determined at the point in time when the degree is posted to the student's academic record based upon the student's grade point average at that time. Grade corrections subsequent to the posting of the degree will be processed by the Registrar's Office but will not impact the honors designation for the student.

K-1-a. Summa Cum Laude

Candidates whose grade-point averages would place them within the top 3 percent of graduates from their respective colleges over the preceding five years are graduated summa cum laude (with highest distinction). See chart below for qualifying grade-point averages for 2021 graduates.

K-1-b. Magna Cum Laude

Candidates whose grade-point averages would place them within the top 6 percent (but below the top 3 percent) of graduates from their respective colleges over the preceding five years are graduated magna cum laude (with great distinction). See chart below for qualifying grade-point averages for 2021 graduates.

K-1-c. Cum Laude

Candidates whose grade-point averages would place them within the top 10 percent (but below the top 6 percent) of graduates from their respective colleges over the preceding five years are graduated cum laude (with distinction). See chart below for qualifying grade-point averages for 2022 graduates.

College	Summa Cum Laude (top 3%)	Magna Cum Laude (top 6%)	Cum Laude (top 10%)
Agricultural & Life Sciences	4.00	3.97	3.93

Art & Architecture	3.98	3.94	3.91
Business & Economics	4.00	3.93	3.85
Education, Health & Human Sciences	4.00	4.00	3.95
Engineering	4.00	3.96	3.92
Law	3.84	3.74	3.64
Letters, Arts & Social Sciences	4.00	4.00	3.94
Natural Resources	4.00	4.00	3.95
Science	4.00	3.97	3.95

K-2. Dean's List

Undergraduate students who are registered for at least 12 credits (10 in the College of Law) and attain a grade-point average of 3.50 for a given semester are placed on lists prepared for the college deans.

Note: The 3.50 GPA is based on 12 graded credit hours (GPA hours) and does not include courses grade Pass/Fail. These lists are publicized within U of I and are distributed to news agencies.

L - Academic Standing, Probation, Disqualification, and Reinstatement

L-1. Academic Standing for Undergraduate Students

Students are considered to be in good academic standing when they have a semester and a U of I cumulative grade-point average of 2.00 or higher.

L-2. Academic Probation for Undergraduates

L-2-a. At the end of a semester, undergraduate students who do not attain a U of I cumulative grade-point average of 2.00 are placed on academic probation for the next semester of enrollment and are referred to the appropriate academic dean for advising. The effect of this probationary status is to serve notice that if a student's cumulative record at the end of the next semester in residence is unsatisfactory, they will be disqualified and ineligible to continue at U of I. Students in their first semester of college who achieve less than a 1.0 grade point average at the end of the semester will be placed on first academic disqualification rather than probation (see L-4-a).

L-2-b. Students on academic probation who attain a U of I cumulative grade-point average of 2.00 or higher are automatically removed from probation.

L-2-c. Students on academic probation who attain a semester grade-point average of 2.00 or higher during the next or subsequent semester after being placed on probation, but whose cumulative grade-point average is still below 2.00 remain on academic probation.

L-2-d. Because final grades for a probationary term may not be available until after a student has registered for an ensuing term, such registration must be considered tentative until the student's academic standing may be determined. If the student is disqualified at the end of the probationary

term, the registration for the ensuing term is invalid and will be cancelled unless the student is reinstated (see L-4).

L-3. Academic Disqualification for Undergraduates

L-3-a. Students in their first semester of college who achieve less than a 1.0 grade point average at the end of the semester will be placed on first academic disqualification.

L-3-b. Students on academic probation with less than 33 cumulative net credits will be disqualified if their semester grade-point average falls below a 2.00 and their U of I cumulative grade-point average falls below a 1.80. Students in this group with a semester grade-point average below a 2.00 and a UI cumulative GPA between 1.80 and 1.99 will remain on probation.

L-3-c. Students on academic probation with 33 or more cumulative net credits will be disqualified at the end of a probationary semester if both their U of I cumulative grade-point average and their semester grade-point average are below 2.00.

L-3-d. To reregister after being academically disqualified, students must be reinstated. (Students must contact their respective college, prior to the beginning of the semester, for the deadline to petition for reinstatement.)

L-3-e. Because final grades for a probationary term may not be available until after a student has registered for an ensuing term, such registration must be considered tentative until the student's academic standing may be determined. If the student is disqualified at the end of the probationary term, the registration for the ensuing term is invalid and will be cancelled unless the student is reinstated (see L-4).

L-4. Academic Reinstatement for Undergraduates

L-4-a. After a first academic disqualification, students may be reinstated (i.e., have their eligibility to continue restored) by petition to and favorable action by the college in which they are enrolled OR by remaining out of U of I for at least one semester. Summer does not qualify as a one semester absence.

L-4-b. After a second academic disqualification, students may be reinstated at any time only by petition to and favorable action by the college in which they are enrolled.

L-4-c. Students academically disqualified for a third time may be reinstated only after successful petition to the college in which they are enrolled and the Academic Petitions Committee.

L-4-d. Students who have been reinstated may continue to register on probation so long as they attain a 2.00 or better grade-point average for each semester following a disqualification.

L-4-e. Students who are academically disqualified and reinstated are reinstated on academic probation.

L-5. Academic Warning for Undergraduates

Students not on probation who attain a grade-point average below 2.00 during a given semester without dropping below a U of I cumulative grade-point average of 2.00 receive an academic warning. Although this

does not affect their academic standing or their eligibility to register, the students are referred to the appropriate academic dean for advising.

L-6. Summer Session

Academic disqualification at the end of a spring semester does not affect a student's eligibility to continue in the immediately ensuing summer, but to register in any subsequent term, the student must be reinstated. Academic standing is not computed at the end of summer session.

L-7. Fresh Start

Former University of Idaho undergraduate students who wish to reenter the university as an undergraduate student may apply for a "Fresh Start" as described below. A student may receive a Fresh Start only once.

L-7-a. Qualification for Fresh Start

To qualify for a Fresh Start, students must:

1. not have been enrolled as a degree seeking student at the University of Idaho for at least the five years immediately before reentering the university as a degree seeking student, and
2. have a University of Idaho cumulative GPA of less than 2.00.

L-7-b. After returning to the University of Idaho, a student must complete 24 credits of academic courses with a minimum cumulative GPA of 2.00 before applying for a Fresh Start. A student must apply for a Fresh Start through their College Dean's Office by the end of the semester following that in which they met these minimum credit and GPA requirements. Once the student's Fresh Start application has been approved, the student's cumulative GPA will be reset to 0.00 as of the time of readmission to the University of Idaho.

L-7-c. If the Fresh Start is approved by the college, the count for the 21-credit limit on withdrawals (see C-2 (p. 73)) will be reset to 0 as of the time of admission to the Fresh Start Program.

L-7-d. University probation and disqualification regulations apply throughout the Fresh Start process.

L-7-e. To graduate with honors, a student in the Fresh Start Program must have at least 56 credits in UI courses after the Fresh Start (see K-1 (p. 91)). Fresh Start Program participants are eligible for the dean's list (see K-2 (p. 91)) on a semester-by-semester basis.

L-7-f. Application forms and explanatory materials are available at the Registrar's Office.

L-8. Academic Standing for Graduate Students

Graduate students are considered to be in good standing when they have a semester and cumulative grade-point average of 3.00 or higher.

L-9. Academic Probation for Graduate Students

L-9-a. A graduate student is placed on academic probation after any semester or summer session in which a GPA of less than 3.00 is earned in courses placed on the graduate transcript, regardless of the student's cumulative GPA.

L-9-b. Graduate students on academic probation who attain a semester and cumulative grade-point average of 3.0 or higher are automatically removed from academic probation.

L-9-c. Graduate students on academic probation who attain a semester GPA of 3.00 or higher during the next or subsequent semester or summer session after being placed on probation, but whose cumulative GPA is still below a 3.00, will remain on academic probation.

L-10. Academic Disqualification for Graduate Students

A graduate student will be disqualified if a semester GPA of less than 3.00 (regardless of cumulative GPA) is earned on courses placed on the graduate transcript during the second consecutive semester or summer session

L-11. Academic Reinstatement for Graduate Students

L-11-a. A graduate student may be reinstated after disqualification under the following conditions: the student may not enroll as a graduate student for at least one semester (fall or spring), must get the positive recommendation of their program's administrator, and must gain approval from the College of Graduate Studies.

L-11-b. Reinstatement is granted for a specific semester only, and the student must enroll in that semester.

L-11-c. The student must receive a term GPA of at least 3.0 the first semester back in the College of Graduate Studies.

L-11-d. A reinstated student will be placed on probation if their cumulative GPA is below a 3.00.

L-11-e. A reinstated student will be disqualified after the second consecutive term where a 3.0 GPA was not achieved (see L-10).

L-12. Law Students

Regulation L does not apply to law students. See the College of Law (p. 304) Announcement for information for law students.

M - Attendance, Field Trips, and Official Student Travel

M-1. Attendance

Instructors will make clear at the beginning of each course the extent to which grades are dependent on attendance and in-class participation. Students are responsible for class attendance. Students are accountable for communicating with the instructor and making up missed work in the event of any absence. Instructors shall provide reasonable opportunity for students to make up work when the student's absence from class resulted from:

1. participation in official university activities and programs,
2. personal illness,
3. family illness and care, or
4. other compelling circumstances.

M-2. Field Trips and Official Student Travel

"Field trip" is defined as any required, course-related student travel that exceeds 25 air miles from the campus or conflicts with other classes that the students involved are taking. (A trip taken within 25 air miles during the class scheduled for the particular class or at a time that does not conflict with other classes the students involved are taking is a "local trip," not a "field trip.")

M-2-a. Missed Class Work

Students participating in field trips, as defined above, or other official UI activities are responsible for conferring in advance with the instructors of any classes that will be missed in order to be eligible for making up missed class work (see M-1).

M-2-b. Approval of Course-Related Field Trips

Administrative approval for course-related field trips will be obtained by the person in charge of the trip as follows:

1. Each field trip as identified in the catalog course description requires prior approval by the department in accordance with divisional procedures (application for approval should be made at least one week before the expected departure).
2. Each field trip NOT identified in the catalog course description requires prior approval by the departmental administrator and the dean of the college (application for approval should be made at least two weeks before the expected departure).

M-2-c. Approval of Other Official Student Travel

Administrative approval for official student travel that is NOT course related is obtained from the vice president for student affairs (application for approval should be made at least two weeks before the expected departure).

M-2-d. Costs

When a college can cover all or part of the cost of a course-related field trip from allocated funds, the college should do so. If the college cannot cover the cost, or a portion thereof, the cost (or remaining portion) must be borne in proportionate share by the students in the course. Students missing required field trips identified in the catalog course description must pay their proportionate shares.

M-2-e. Field-Trip Completion Deadline

All field trips and other U of I-approved student travel must be completed before 7:30 a.m. on the fifth day of classes before the start of final examinations. (See Part3, Pg. 4 of 6.)

M-2-f. Vehicle Information

Information concerning privately owned vehicles (registration, insurance, driver's license, etc.) to be used for field trips or other official student travel must be filed in the Risk Management Office (Rm. 209, Admin. Bldg.). Administrators of departments and divisions are responsible for ensuring that the required information is filed before the initial use of each privately owned vehicle in a given academic year.

M-3. Accommodation of Religious Observances in the Administration of Examinations

When tests or examinations fall on days objectionable to a student because of religious beliefs, the student should contact the instructor as soon as possible. The instructor may require the student to submit a concise, written statement of the reasons for the request. If the request appears to be made in good faith, the instructor should make alternative arrangements for the administration of the examination or test. If the instructor believes the request not to be in good faith, or if the instructor and the student are unable to agree on arrangements, the student or the instructor should seek the assistance of the departmental administrator, dean, or provost, in that order.

M-4. Drop for Non-attendance

Students are responsible for notifying their instructors through the Registrar when extenuating circumstances not covered as an official absence as defined in M-1 prevent their attendance during the first week of the semester. Instructors may notify the Registrar to drop students who have not attended class or laboratory meetings nor notified the instructor through the Registrar by the end of the sixth business day following the start of the class. Valid reasons for missing classes do not relieve the student of making up the work missed.

N - Class Rating

Class ratings of undergraduates are determined as follows:

Sophomore - 26 credits

Junior - 58 credits

Senior - 90 credits

O - Miscellaneous

O-1. Credit Requirements for Full-Time Students

O-1-a. Full-Time Classification for Non-Fee Related Purposes

For purposes other than fees, U of I students in all divisions except the College of Graduate Studies and the College of Law must carry 12 credits each semester or summer session to be classified as full time.

O-1-b. Full-Time Classification for Fee Related Purposes

For fee and tuition purposes only, students carrying ten or more credits (or equivalent in audits and zero-credit registrations) and all teaching/research assistants on full appointment, regardless of the number of credits they register for, are classified as full-time students.

O-1-c. Full-Time Classification for Graduate Students

Students in the College of Graduate Studies are considered full time when:

1. registered for nine credits (or equivalent) of course and/or thesis work; or
2. on full-time appointments as teaching assistants or research assistants.

O-1-d. G.I. Bill Requirements

Veterans and war orphans attending U of I on the G.I. Bill® must carry certain minimum credit loads to be considered by the Veterans' Administration for benefits as indicated in the table accompanying this regulation. (Audits do not count; repeats and reviews may be included when the student's advisor certifies that the course is required in the student's curriculum or is needed to remove a deficiency or to provide essential background for the student's program; file a copy of the program with the veterans' clerk at the Office of Dean of Students.)

Benefits	Academic year Undergraduate	Academic Year Graduate	Summer Session Undergrad & Grad
Full	12 or more	9 or more	Must be Arranged
Three-fourths	9-11	6-8	
Half	6-8	3-5	
Fees and tuition only	Fewer than 6	Fewer than 3	

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government website at <https://www.benefits.va.gov/gibill> ([https://urldefense.com/v3/_https://benefits.va.gov/gibill/index.asp_!!JYXjzlvb!xxKE6B2gY84P38Yco5EZZ31B3spJ5sgbNelXttbXBdYJrdv8-7XaXA74eMRKTWw\\$/](https://urldefense.com/v3/_https://benefits.va.gov/gibill/index.asp_!!JYXjzlvb!xxKE6B2gY84P38Yco5EZZ31B3spJ5sgbNelXttbXBdYJrdv8-7XaXA74eMRKTWw$/)).

O-1-e. Full-Time Classification for Law Students

Students in the College of Law are considered full time when registered for 10 credits (or equivalent) of course work.

O-1-f. Full-Time Classification for ASUI and *Argonaut* Positions

The president, vice president, and senators of the Associated Students University of Idaho are considered full time when carrying at least the following credit loads: president, three credits; vice president and senators, six credits. The editor and associate editor of the *Argonaut* are considered full time when paying full-time student fees and carrying at least the following credit loads: editor, three credits; associate editor, six credits.

O-2. Academic Performance

Instructors and students are responsible for maintaining academic standards and integrity in their classes. Consequences for academic dishonesty may be imposed by the course instructor. Such academic consequences may include but cannot exceed a grade of "F" in the course. If the student deems the grade unfair, they may appeal through the appropriate departmental administrator and college dean, and finally to the Academic Hearing Board.

In addition to the academic consequences, disciplinary penalties for academic dishonesty may include suspension or expulsion and must be handled by the Student Judicial System, which is described in the Student Code of Conduct section of the "Policies & Information of Interest to Students" booklet and the *Faculty-Staff Handbook*.

O-3. Application for Graduation

Degree candidates must submit an Application for Graduation to their college. Students should submit applications no later than the semester in which they will be completing their degree requirements. If two degrees are to be received concurrently, separate applications must be filed with

the dean(s) of the college(s) concerned. The graduation fees will be posted on the student's account once the graduation application has been fully processed (see "Fees and Expenses (p. 57)"). The deadline for filing Applications for Graduation without a late service charge is the 10th day of the semester in which the student will be graduating.

O-4. Commencement

Formal commencement exercises are held at the close of the fall and spring semesters; however, diplomas are also issued at the close of the summer session to such candidates as have completed their graduation requirements at that time. All students who graduate in the summer, fall, or spring are entitled to participate in the commencement exercises. Students must indicate on their application for degree whether they intend to participate in the formal commencement exercises so that appropriate arrangements can be made. Reservations for caps, gowns, and hoods must be made by the date specified by the registrar. Diplomas are ready about six weeks after the end of the academic session in which graduation requirements are completed.

O-5. Limitations on Class Size

O-5-a. Approval of Limitations

Limitations on class size must have prior approval by the dean of the college in which the course is offered. If it becomes necessary to limit the size of a class on a continuing basis (more than two semesters), the limitations must be approved through faculty channels—University Curriculum Committee and university faculty—and be made part of the catalog description of the course.

O-5-b. Enrollment in Limited Classes

Preference for enrollment in courses with limitations on class size is given to students enrolling in them for the first time. At the option of the department, students repeating courses for any reason may be placed on standby status. Students in that status are allowed to register for the course, if there is available space, by permission of the department offering the course. In no case may a student be held in standby status for any one course for more than two consecutive semesters.

O-5-c. Appealing Limitations

Any student denied admission to a class may appeal in writing to the provost for a review of the circumstances involved.

O-6. Students' Right to Change Course Sections

Students have the right to change from one section of a course for which they are qualified to another section of the same course during the first two weeks of classes so long as the section into which they wish to transfer has not reached the maximum number of students that may be accommodated (see appeal procedure in O-5).

O-7. Availability of Instructors' Names

As a matter of principle, students and their academic advisors and deans have the right to know the names of the instructors who will teach course sections to be offered during the immediately ensuing semester or summer session. Departments are required to submit the names of instructors for all course sections for publication in the Class Schedule. Where it is impossible to determine the teaching assignments of individual members of the instructional staff before the deadline for the Class Schedule, departments are responsible for making information

concerning adjustments in teaching assignments generally available to students, advisors, and deans at such time as they occur.

O-8. Confidentiality of Academic and Counseling Records

See the student records policy in the booklet entitled "Policies and Information of Interest to Students," available from the Office of the Dean of Students or the Office of the Vice Provost for Student Affairs (TLC 232), and other locations around the campus.

O-9. Deviations from Established Class Schedules

O-9-a. The provost periodically reminds deans and departmental administrators of their responsibility to ensure that classes meet in conformity with the course descriptions and *Class Schedule*. (It is the responsibility of the University Curriculum Committee to see that the time requirements stated in new or revised course descriptions satisfy general regulation D-1 (p. 73), "Credit Defined"; it is the responsibility of the registrar to see that listings in the Class Schedule conform to the respective course descriptions.)

O-9-b. The cancellation of a particular class session or sessions on an occasional basis, normally due to unusual circumstances affecting the instructor or the students in the class, is a matter for the instructor's discretion. Nonetheless, instructors should keep such cancellations to a minimum, be satisfied that the grounds for cancellation are defensible, give as much advance notice of the cancellation as is possible, and, if time permits, obtain the concurrence of the departmental administrator in advance. Frequent failure of an instructor to meet classes, except for reasons clearly recognizable as adequate, may be grounds for disciplinary action.

O-9-c. The scheduling of required class meetings at times other than those specified in the Class Schedule or authorized in the course descriptions (e.g., field trips) requires approval by the provost. In addition to securing the provost's approval, the instructor must give the students at least two weeks' notice, provide alternative means of completing class requirements for students who have irreconcilable conflicts with the irregular meetings, and, normally, cancel regularly scheduled class meetings equivalent to the irregular meetings. (If it is proposed that such irregular meetings be made a continuing practice, they are to be incorporated in the course description and the revised description submitted to the University Curriculum Committee for routine faculty approval.)

O-9-d. Authorized class meetings at times other than those shown in the Class Schedule is one of the topics that instructors are to discuss at the first or second class session.

O-10. Academic Certificates

The University of Idaho offers Academic Certificates in various academic disciplines. An academic certificate is defined as a coherent body of work designed to reflect specialized expertise. The curricular requirements of an academic certificate can be found in the relevant department in the catalog.

O-10-a. Undergraduate Academic Certificates

1. An undergraduate academic certificate must include at least 12 credits of coursework.

2. All required coursework must be completed with a grade of 'C' or better unless the certificate specifies a higher grade requirements.
3. A maximum of six credits of coursework which is either transferred from another regionally-accredited institution or is more than five years old at the time of graduation may be used towards completion of an academic certificate.

O-10-b. Graduate Academic Certificates

1. A graduate academic certificate must include at least 12 credits of coursework. At least half of the credits completed towards a graduate academic certificate must be in graduate level coursework.
2. All required coursework must be completed with a grade of 'B' or better unless the certificate specifies a higher grade requirement.
3. A maximum of six credits of coursework which is either transferred from another regionally accredited institution or is more than five years old at the time of graduation may be used towards completion of an academic certificate.
4. Certificates offered jointly with other Idaho institutions and with an established agreement approved by the Provost may allow additional transfer coursework, but must include at least one course from the University.

O-11. Posthumous Degrees

In the instance of a student's death prior to degree completion, it is important that the university recognize the effort made toward degree achievement.

O-11-a. Undergraduate Posthumous Degrees

Requests for the award of a posthumous degree at the undergraduate level should be referred to the Registrar's Office.

1. Posthumous degrees may be awarded to deceased undergraduate students who have completed all but thirty (30) credit hours of the requirements for graduation and have been enrolled as a student within the past two regular semesters. The remaining thirty (30) credit hours would complete their degree requirements and meet all university, college, and department GPA requirements.
2. Posthumous degrees must be approved by the academic department and college.

O-11-b. Undergraduate Appeal Process

If the student could not have reasonably completed all requirements in the final thirty (30) credits of attendance, but the request has the support of the academic department and college office, the request must be reviewed and approved by the Academic Petitions Committee. In instances where the award of the degree posthumously is not appropriate due to remaining requirements, the college may wish to grant a certificate acknowledging a student's course of study in a particular discipline.

O-11-c. Graduate Posthumous Degrees

Due to the nature of studies at the graduate level, requests for posthumous degrees for master's, specialist, or doctoral-level students are referred to the College of Graduate Studies. The College of Graduate Studies determines whether a posthumous degree for a particular student will be considered. If so, the College of Graduate Studies will review the request with the appropriate academic department and college office. The College of Graduate Studies will inform the Registrar of the decision.

1. Posthumous degrees in non-thesis graduate programs or in College of Law programs may be awarded to deceased graduate and law students who have completed 75% of the required coursework, were in good academic standing, were registered within the last year, and would have likely finished the degree within one academic year.
2. Posthumous degrees in master's thesis or doctoral programs may be awarded to deceased graduate students who have completed all required coursework, have successfully defended a proposal of their research to their committee, are in good academic standing, and would have likely defended their thesis or dissertation within one academic year. Additionally, doctoral students must have been successfully advanced to candidacy.

O-11-d. Graduate Appeal Process

If the student could not have reasonably completed all requirements in an academic year, but the request has the support of the academic department and college, the request must be petitioned for consideration to the University Graduate Council for approval. If the student does not meet the criteria for a posthumous degree or in instances where the award of the degree posthumously is not appropriate due to remaining requirements, the college may wish to grant a certificate acknowledging a student's course of study in a particular discipline.

O-11-e. Transcript Notation

Upon posting of the degree, the transcript will be annotated to indicate that the degree was awarded posthumously.

COLLEGES AND RELATED UNITS

- College of Agricultural and Life Sciences (p. 98)
- College of Art and Architecture (p. 158)
- College of Business and Economics (p. 172)
- College of Education, Health and Human Sciences (p. 202)
- College of Engineering (p. 246)
- College of Graduate Studies (p. 292)
- College of Law (p. 304)
- College of Letters, Arts and Social Sciences (p. 310)
- College of Natural Resources (p. 388)
- College of Science (p. 442)
- Continuing Education (p. 499)
- Cooperative Programs (p. 499)
- Engineering Outreach Program (p. 499)
- Independent Study in Idaho (p. 500)
- Interuniversity Program in Public Administration (p. 501)
- Medical Education (WWAMI Program) (p. 501)
- ROTC (p. 502)
- Summer Session (p. 505)
- University Honors Program (p. 505)
- University of Idaho Centers (p. 507)

College of Agricultural and Life Sciences

Michael Parrella, Dean (53 Iddings Wing, Ag. Sc. Bldg.; 208-885-6681); Cathy Roheim, Senior Associate Dean, Barbara Petty, Associate Dean and Director of University of Idaho Extension; Mark McGuire, Associate Dean of Research and Director of the Idaho Agricultural Experiment Station; Matthew Doumit, Associate Dean and Director of Academic Programs.

The College of Agricultural and Life Sciences provides quality programs in agricultural, food, family and consumer sciences, and related areas to all of Idaho. In addition to academic programs, the college also advances knowledge in these areas by research conducted through the Idaho Agricultural Experiment Station and provides information transfer and application of new knowledge to the state and the nation through the Cooperative Extension System. The college also actively participates in international development and student and faculty exchange programs around the world. The College of Agriculture was established in 1901 and was renamed the College of Agricultural and Life Sciences in 2001. The Margaret Ritchie School of Family and Consumer Sciences became part of the college in 1983.

Advantages

The College of Agricultural and Life Sciences offers a quality education in a professional and friendly atmosphere. Each student has an academic advisor who is readily available to assist in academic and career planning. There is also a Peer Mentor program to help first-time students become acquainted with the college and the university. Undergraduate students often have the opportunity to experience their major by working on research projects and internships directed by faculty members.

The college also offers leadership opportunities through a variety of departmental and college student organizations.

Faculty

The faculty are the key to quality education. In the College of Agricultural and Life Sciences, there is a low student/teacher ratio, and most classes are taught by faculty members. They bring to their students a strong commitment to teaching and a richness of depth, experience, and research.

Units

The College of Agricultural and Life Sciences offers 43 programs through 7 academic units. The units are Agricultural Economics and Rural Sociology; Agricultural Education, Leadership and Communication; Animal Veterinary and Food Sciences; Entomology, Plant Pathology and Nematology, the Margaret Ritchie School of Family and Consumer Sciences; Plant Sciences; and Soil and Water Systems.

Facilities of the College

The College of Agricultural and Life Sciences is housed in seven buildings on campus and in many other facilities around the state. Some of the unique facilities include a child development laboratory, a state-of-the-art biotechnology research laboratory, an agricultural engineering laboratory, a food science and toxicology research center, and research farms of more than 14,000 acres for beef, dairy, sheep, plant science, a certified organic orchard, and other programs. In addition to facilities at Moscow, there are offices in 42 counties and 3 offices serving federally recognized tribes and research and extension centers at 9 locations throughout Idaho.

Agricultural Experiment Station

The Idaho Agricultural Experiment Station was established in 1892 to support the research function of the College of Agricultural and Life Sciences, and has the responsibility to conduct applied and basic research leading to problem solving and new knowledge for agricultural industries, rural communities, and family living. The Idaho Agricultural Experiment Station is integrated into all departments of the college. Most of the college's faculty have research appointments in the experiment station. The Idaho Agricultural Experiment Station is coordinated with and provides research for teaching and extension to more effectively meet the needs of Idaho citizens.

The Idaho agricultural research program is statewide. Research is conducted in a number of areas related to agriculture and on all major agricultural commodities. The administrative center for the research program is located on the Moscow campus. There are 10 research and extension centers in strategic agricultural areas around the state where resident research and extension personnel are located.

The Idaho Agricultural Experiment Station shares the responsibility of developing and educating future scientists through undergraduate research and graduate assistantships. Currently, there are approximately 150 graduate students enrolled in the College of Agricultural and Life Sciences, with assistantships or stipends for their training. These appointments are generally for two years for a M.S. and three years for a Ph.D., during which time the students conduct research as a part of their graduate education.

University of Idaho Extension

The Cooperative Extension System was established by the Smith-Lever Act, signed May 8, 1914, to help extend research to the people of the United States in order to improve their farms, families, and communities. The Idaho legislature approved the Cooperative Extension concept in 1915. In 1917, additional state legislation brought the county boards of commissioners into the cooperative three-way federal, state, and county partnership.

The Extension System is an integral part of the University of Idaho and the College of Agricultural and Life Sciences and is administratively coordinated with the teaching and research functions of the college. The extension function is organized to extend the knowledge created through research to the people of the state of Idaho so that they can apply the findings to their particular situations, thereby solving their problems and improving their quality of life.

The headquarters of University of Idaho Extension is in Moscow. District offices are located at Caldwell, Coeur d'Alene, Twin Falls, and Idaho Falls. The state is the campus for University of Idaho Extension.

Educators live and work in the areas to which they are assigned by mutual agreement of the university and the counties or tribes involved. Agricultural, family and consumer sciences, community development, natural resources and youth educators are located in 42 of Idaho's 44 counties, provide service to 3 federally-recognized tribes and are also involved in multi-county programming.

Supporting the county faculty are state Extension specialists located at Idaho Falls, Parma, Caldwell, Aberdeen, Coeur d'Alene, Boise, Twin Falls, Moscow, Salmon, and Kimberly. These specialists keep up to date by conducting relevant research and through cooperation with research scientists of the College of Agricultural and Life Sciences and the U.S. Department of Agriculture.

Extension educational programs are conducted in seven broad areas. These are:

1. Food production systems
2. Health and wellness
3. Small farms and horticulture
4. Water
5. Forest, range, and other natural resources
6. Community Development
7. 4-H youth development.

Programs are both disciplinary and interdisciplinary and are designed to address the issues facing Idahoans. Major programming issues include water quality, youth at risk, waste management, food security, obesity, community vitality, agricultural sustainability, and STEM (science, technology, engineering, math).

University of Idaho Extension helps people improve the social, economic, and environmental qualities of their lives through research-based education and leadership development focused on issues and needs. To accomplish this mission, University of Idaho Extension works under the basic philosophy that programs planned with people will achieve greater success than programs planned for them. Extension takes the resources and research of the land-grant university out into the state so that Idaho's citizens can benefit from their university.

General College Requirements for Graduation

University Requirements

See regulation J (p. 78) for requirements that all students in the university must meet.

College Requirements

See the individual department section for degree requirements within each department.

Major Curricula

The specific requirements for the undergraduate majors are listed in the individual department section. Each student is assigned an advisor who assists in the planning of their program; however, the student has the final responsibility for the completion of all university, college, and departmental requirements.

Degrees and Curricula Offered

Students in the College of Agricultural and Life Sciences are encouraged to pursue a broad education. In each curriculum, minimum requirements are specified in agriculture, life, or family and consumer sciences disciplines; in the biological, physical, and social sciences; and in humanities to qualify the graduate to enter professional fields in agriculture, life and family and consumer sciences. Each curriculum also permits students to choose elective courses that will assist in personal and professional growth, development of communication skills, and a better understanding of the world in which we live.

Undergraduate

Baccalaureate degrees and major curricula offered by the College of Agricultural and Life Sciences include Bachelor of Science degrees in Agricultural and Life Sciences (with majors in Agricultural Science, Communication and Leadership; Agricultural Systems Management; and Sustainable Crop and Landscape Systems with 5 emphasis areas); Agricultural Education; Agricultural Economics (with emphases in Agribusiness or Applied Economics); Animal, Veterinary and Food Sciences (with options in production, business, dairy science, science/preveterinary, dairy foods management, and food science); Family and Consumer Sciences with degrees in Early Childhood Development and Education; and Family and Consumer Sciences (with majors in: child, family, and consumer studies – 3 options; apparel, textiles, and design; and food and nutrition with options in dietetics and nutrition). Baccalaureate degrees in Agricultural Engineering and Biological Systems Engineering are offered through the College of Engineering. See the departmental sections below for the programs of study leading to these degrees.

Graduate

Graduate study leading to the degree of Master of Science is offered in Applied Economics; Agricultural Education; Animal Science; Entomology; Family and Consumer Sciences; Food Science; Plant Science; and Soil and Land Resources. Graduate study leading to the degree of Doctor of Philosophy is offered in Animal Physiology; Entomology; Food Science; Plant Science; and Soil and Land Resources. Both M.S. and Ph.D. programs in Biological and Agricultural Engineering are offered through the College of Engineering. Students must fulfill the requirements of the College of Graduate Studies and the units in which they study.

Agricultural and Life Sciences Core

Code	Title	Hours
AGEC 278	Farm and Agribusiness Management	4
AGED 406 or AGED 407	Exploring International Agriculture Global Agricultural & Life Sciences Systems	3
AGED 451	Communicating in Agriculture	3
ECON 202	Principles of Microeconomics	3
Total Hours		13

Department of Agricultural Economics and Rural Sociology

Christopher McIntosh, Dept. Head (39A Iddings Wing, Ag. Sc. Bldg. 83844-2334; phone 208-885-6264).

Agricultural economics is an applied branch of economics. It is a social science that deals with economic problems in agriculture, the food industry, rural communities, and the use and conservation of our natural resources. Economic principles and theories are used to determine maximum economic efficiency in the production and marketing of agricultural commodities and in the use of natural resources.

The Bachelor of Science program in Agricultural Economics prepares students to address problems faced by farmers and ranchers, agricultural marketing and supply companies, natural resource agencies, and rural communities. The department offers the B.S. degree in Agricultural Economics with two emphasis areas: Agribusiness and Applied Economics. Areas of study within the emphases include agricultural finance, agricultural policy, agricultural commodity risk management, marketing, farm and ranch management, rural community development, international trade and development, economic use of natural resources, and management of agribusiness firms. The department also offers two minors: Agribusiness and Natural Resource Economics.

The Agribusiness emphasis prepares students in the management functions of farms, ranches, and businesses involved with the production and marketing of farm commodities and farm production inputs. The Applied Economics emphasis prepares students to become professional economists for commercial agricultural firms and governmental agencies or to pursue advanced degrees in this field before entering the profession.

The M.S. in Applied Economics encompasses agribusiness, natural resources, and rural development economics. Agricultural development and international trade are also emphasized.

Students initiating graduate work in applied economics should have a background in economics and quantitative methods. The following specific course areas are recommended: economic principles, six credits; intermediate microeconomics, three credits; statistics, three credits; mathematics, through introductory calculus; and applied economics and/or agricultural economics, nine credits. Individual graduate programs are tailored to allow students to take courses and develop thesis proposals in line with their professional interests.

The department welcomes inquiries about its program and suggests that anyone interested in possible pursuit of a degree in agricultural economics should contact the department (telephone 208-885-6264) or visit the website at www.uidaho.edu/cals/aers (<http://www.uidaho.edu/cals/aers/>).

Majors

- Agricultural Economics (B.S.Ag.Econ.) (p. 101)

Minors

- Agribusiness Minor (p. 100)
- Natural Resource Economics Minor (p. 104)
- Agricultural Commodity Risk Management Minor (p. 100)

Certificates

- Agricultural Commodity Risk Management Undergraduate Academic Certificate (p. 101)

Applied Economics Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Agricultural Economics and Rural Sociology. See the College of Graduate Studies (p. 292) section for the applicable general requirements.

- Applied Economics (M.S.) (p. 103)

Agribusiness Minor

Code	Title	Hours
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AGEC 356	Agricultural and Rural Policy	3
AGEC 301 or AGEC 302	Managerial Economics: Production Managerial Economics: Consumption & Markets	3
Select 7 credits of Upper-Division Agricultural Economics Electives		7
Total Hours		20

Courses to total 20 credits for this minor

Agricultural Commodity Risk Management Minor

Code	Title	Hours
Select two of the following:		6
AGEC 389	Understanding and Using Futures and Options Markets	
AGEC 414	Financial Analysis of Agricultural Firms	
AGEC 490	Commodity Price Analysis	
Select one of the following:		3
FIN 465	Introduction to Market Trading	
FIN 466	Market Trading Strategies	
Select at least 4 credits from the following: ¹		4
AGEC 389L	Applied Commodity Market Analysis Lab	
AGEC 398	Internship	
AGEC 468	Risk Management: Commodity Merchandising	
AGEC 469	Risk Management: Commodity Trading	
FIN 467	Barker Capital Management Group	
FIN 468	Market Trading Lab	
Select 6 credits from the following: ²		6
AGEC 481	Agricultural Markets in a Global Economy	
OM 470	Supply Chain Analytics	

ECON 453	Econometrics	
Total Hours		19

1
 AGECE 389L, AGECE 468, and AGECE 469 are repeatable.

2
 AGECE 389, AGECE 414, or AGECE 490 may be taken for this elective if not taken as one of the first two required course choices.

Course to total 19 credits for this minor.

Agricultural Commodity Risk Management Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
Select two of the following:		6
AGECE 389	Understanding and Using Futures and Options Markets	
AGECE 414	Financial Analysis of Agricultural Firms	
AGECE 490	Commodity Price Analysis	
Select one of the following:		3
FIN 465	Introduction to Market Trading	
FIN 466	Market Trading Strategies	
AGECE 389	Understanding and Using Futures and Options Markets ¹	
or AGECE 414 Financial Analysis of Agricultural Firms		
or AGECE 490 Commodity Price Analysis		
AGECE 490	Commodity Price Analysis	3
Select at least 3 credits from the following:		3
AGECE 389L	Applied Commodity Market Analysis Lab	
AGECE 468	Risk Management: Commodity Merchandising	
AGECE 469	Risk Management: Commodity Trading	
FIN 467	Barker Capital Management Group	
FIN 468	Market Trading Lab	
Total Hours		15

Courses to total 12 credits for this certificate

1
 AGECE 389, AGECE 414, or AGECE 490 may be taken for this elective if not taken as one of the first three required courses.

Agricultural Economics (B.S.Ag.Econ.)

The agricultural economics area has two programs designed to prepare students for careers in the agricultural economics profession. The agribusiness major provides students with training related to management, finance, and marketing in the agribusiness sector. The agricultural economics major provides students with the theory behind decisions concerning agricultural production, marketing, resource use,

pricing, and policy. Both of these majors prepare students to pursue advanced degrees if they choose.

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
AGECE 101	The Business of Agriculture	1
AGECE 278	Farm and Agribusiness Management	4
AGECE 289	Agricultural Markets and Prices	3
AGECE 301	Managerial Economics: Production	3
AGECE 302	Managerial Economics: Consumption & Markets	3
AGECE 356	Agricultural and Rural Policy	3
AGECE 451	Applied Environmental and Natural Resource Economics	3
or AGECE 452	Water Economics and Policy Analysis	

AGECE 478	Advanced Agribusiness Management	3
AGECE 481	Agricultural Markets in a Global Economy	3
COMM 101	Fundamentals of Oral Communication	3
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
STAT 251	Statistical Methods	3
Select one of the following:		4-5

BIOL 102 & 102L	Biology and Society and Biology and Society Lab	
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	

Emphasis		Hours
Select one of the following Emphases:		42-43
Applied Economics (p. 101)		
Agribusiness (p. 102)		

Total Hours	90-92
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A. Applied Economics Emphasis

Code	Title	Hours
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
ECON 453	Econometrics	3
ENGL 317	Technical Writing II	3
MATH 170	Calculus I	4
Economics/Math/Statistics Electives		
Select three courses from the following:		9
ECON 343	Money and Banking	
ECON 407	Public Finance	
ECON 441	Labor Economics	
ECON 446	International Economics	
ECON 447	International Development Economics	
MATH 330	Linear Algebra	
STAT 431	Statistical Analysis	

or other 300 or 400 level Economics courses by permission

Agricultural Economics Electives	
Select 3 credits of Agriculture Economics Electives	3
Technical Agriculture Electives	
Select 12 credits of Technical Agriculture Electives	12
Total Hours	40

Courses to total 120 credits for this degree

B. Agribusiness Emphasis

Code	Title	Hours
AGEC 414	Financial Analysis of Agricultural Firms	3
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing II	
Select two of the following:		6
AGEC 333	Introduction to Sales	
BLAW 265	Legal Environment of Business	
MKTG 321	Marketing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Business or Economics Electives		
Select 12 credits of Agricultural Economics, Economics, Accounting, or Business Electives:		12
Technical Agriculture Electives		
Select 12 credits of Technical Agriculture Electives:		12
Total Hours		39-40

Courses to total 120 credits for this degree

Applied Economics Emphasis

Fall Term 1		Hours
AGEC 101	The Business of Agriculture	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
Technical Agriculture, Major Elective Course		3
Hours		14
Spring Term 1		
MATH 170	Calculus I	4
ENGL 102	Writing and Rhetoric II	3
ECON 202	Principles of Microeconomics	3
Humanistic and Artistic Ways of Knowing Course		3
Technical Agriculture, Major Elective Course		3
Hours		16
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
AGEC 278	Farm and Agribusiness Management	4
ECON 201	Principles of Macroeconomics	3
(BIOL 102 AND BIOL 102L) OR (BIOL 115 AND BIOL 115L) OR (BIOL 250 AND BIOL 255)		4
Hours		14
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
AGEC 289	Agricultural Markets and Prices	3

STAT 251	Statistical Methods	3
Scientific Ways of Knowing Course		4
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Fall Term 3		
AGEC 302	Managerial Economics: Consumption & Markets	3
AGEC 356	Agricultural and Rural Policy	3
ECON 351	Intermediate Macroeconomic Analysis	3
ENGL 317	Technical Writing II	3
Technical Agriculture, Major Elective Course		3
Hours		15
Spring Term 3		
AGEC 301	Managerial Economics: Production	3
ECON 352	Intermediate Microeconomic Analysis	3
Social and Behavioral Ways of Knowing Course		3
Technical Agriculture, Major Elective Course		3
ECON 343 OR ECON 407 OR ECON 441 OR ECON 446 OR ECON 447 OR MATH 330 OR STAT 431		3
Hours		15
Fall Term 4		
AGEC 481	Agricultural Markets in a Global Economy	3
ECON 453	Econometrics	3
ECON 343 OR ECON 407 OR ECON 441 OR ECON 446 OR ECON 447 OR MATH 330 OR STAT 431		3
ECON 343 OR ECON 407 OR ECON 441 OR ECON 446 OR ECON 447 OR MATH 330 OR STAT 431		3
Elective Course		3
Hours		15
Spring Term 4		
AGEC 478	Advanced Agribusiness Management	3
American Diversity Course		3
Elective Course		3
Elective Course		3
AGEC 451 OR AGECE 452		3
Hours		15
Total Hours		120

Agribusiness Emphasis

Fall Term 1		Hours
AGEC 101	The Business of Agriculture	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
Humanistic and Artistic Ways of Knowing Course		3
Technical Agriculture, Major Elective Course		3
MATH 143 OR MATH 160 OR MATH 170		3
Hours		16
Spring Term 1		
ECON 202	Principles of Microeconomics	3
ENGL 102	Writing and Rhetoric II	3
Scientific Ways of Knowing Course		4
Humanistic and Artistic Ways of Knowing Course		3
Technical Agriculture, Major Elective Course		3
Hours		16
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
AGEC 278	Farm and Agribusiness Management	4
ECON 201	Principles of Macroeconomics	3
(BIOL 102 AND BIOL 102L) OR (BIOL 115 AND BIOL 115L) OR (BIOL 250 AND BIOL 255)		4
Hours		14
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3

AGEC 289	Agricultural Markets and Prices	3
STAT 251	Statistical Methods	3
Technical Agriculture, Major Elective Course		3
Elective Course		3
Hours		15
Fall Term 3		
AGEC 302	Managerial Economics: Consumption & Markets	3
AGEC 356	Agricultural and Rural Policy	3
American Diversity Course		3
UPDV, Elective Course		3
ENGL 313 OR ENGL 317		3
Hours		15
Spring Term 3		
AGEC 301	Managerial Economics: Production	3
UPDV, Elective Course		3
Technical Agriculture, Major Elective Course		3
AGEC 451 OR AGECE 452		3
AGEC 333 OR BLAW 265 OR MHR 413 OR MKTG 321		3
Hours		15
Fall Term 4		
AGEC 481	Agricultural Markets in a Global Economy	3
Social and Behavioral Ways of Knowing Course		3
UPDV, Major Elective Course		3
Elective Course		3
AGEC 333 OR BLAW 265 OR MHR 413 OR MKTG 321		3
Hours		15
Spring Term 4		
AGEC 414	Financial Analysis of Agricultural Firms	3
AGEC 478	Advanced Agribusiness Management	3
UPDV, Major Elective Course		3
Elective Course		5
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Applied Economics Emphasis

1. Students will possess the ability to identify economic related problems and assess the impact and implications of the problem.
2. Students will demonstrate an integrated understanding and knowledge of and ability to apply microeconomic and macroeconomic principles, as well as statistical techniques and data analytics, to data to analyze economic problems.
3. Students will possess the ability to apply critical thinking in assembling pertinent data, formulating and executing proper analytical techniques using appropriate computational analysis to obtain solutions to economic problems.

Agribusiness Emphasis

1. Students will possess the ability to identify business management problems related to agriculture and food industries.
2. Students will demonstrate social responsibility, leadership, teamwork, integrity, intellectual honesty, and respect for diversity.
3. Students will demonstrate an integrated understanding and knowledge of economics, business management, and accounting

concepts and the ability to use them in analysis of applied business management problems.

4. Students will possess the ability to effectively communicate, verbally and in writing, problems, analyses, and solutions to a variety of audiences.
5. Students will possess the ability to apply strategic thinking in assembling pertinent data, formulating and executing proper analytical techniques using appropriate principles and tools to address problems faced by business management.

Applied Economics (M.S.) Master of Science. Major in Applied Economics.

The M.S. program in applied economics is designed to prepare students for management, research, and policy positions in the public and private sectors of the economy, and for further graduate study.

The M.S. thesis option is offered as a 32 credit stand-alone degree or as a 32 credit thesis degree with optional emphasis area(s). The minimum of 32 required credits can be satisfied by taking a combination of 500 and 400 level courses, with at least 18 credits at 500 level, plus no more than 3 credits of 300 level courses in supporting areas.

An emphasis may be selected in any of the following three areas: Agricultural Economics, Natural Resources, and Agribusiness. Both thesis options include six letter graded thesis credits (AGEC 500) and 26 credits of course work including the following:

Code	Title	Hours
AGEC 506	Faculty Seminar Series	0
AGEC 525	Master's Econometrics	3
AGEC 526	Master's Microeconomics Analysis	3
AGEC 527	Mathematics for Economists	3
AGEC 529	Research Methods (Max 2 credits)	1-2
AGEC Electives		15
Total Hours		25-26

A student has the option to not pursue an emphasis in which case the student must complete as part of the 15 credits of AGEC electives, 9 credits chosen from the following courses:

Code	Title	Hours
AGEC 532	Natural Resource Economics and Policy	3
AGEC 533	International Trade and Policy	3
AGEC 534	Production Economics	3
AGEC 535	Industrial Organization	3
AGEC 587	Regional Economic Development Methods	3
Total Hours		15

If an emphasis area is chosen, two courses must be selected from those specifically listed in that emphasis area, which will be used as part of the 15 credits of AGEC electives. Emphasis areas are:

Agribusiness

Code	Title	Hours
AGEC 535	Industrial Organization	3
AGEC 533	International Trade and Policy	3

AGEC 534	Production Economics	3
Total Hours		9

Agricultural Economics

Code	Title	Hours
AGEC 534	Production Economics	3
AGEC 535	Industrial Organization	3
Total Hours		6

Natural Resources

Code	Title	Hours
AGEC 532	Natural Resource Economics and Policy	3
Select one additional course:		3
Total Hours		6

More than one emphasis area may be completed as long as each emphasis area requirement is met. However, only the declared emphasis area will appear on the student's transcript.

Students may take a non-thesis option M.S. degree. Under this option, a student will take a minimum of 32 credits of coursework including the 26 credits of departmental course requirements, which are the same as the stand-alone thesis option. For the non-thesis option, a three-credit paper will be written and presented by the student addressing a topic determined jointly by the student and the student's graduate committee. This option is only available for students not receiving financial support from research funds.

1. Students will possess understanding of the fundamental theories of microeconomics.
2. Students will be able to identify key economic issues and their determinants and develop a systematic approach to answer economic questions.
3. Students will demonstrate the ability to quantitatively analyze economic problems and make statistical inferences as to the effects of explanatory variables on dependent variables.
4. Students will have the ability to effectively communicate, both orally and in writing, the findings of their economic research.
5. Students will demonstrate the ability to effectively collaborate with other students, faculty, and constituents on economic research.
6. Students will show the ability to conduct themselves in a professional manner to fellow students, faculty, and constituents.

Natural Resource Economics Minor

Code	Title	Hours
AGEC 356	Agricultural and Rural Policy	3
AGEC 451	Applied Environmental and Natural Resource Economics	3
AGEC 477	Law, Ethics, and the Environment	3
AGEC 301 or AGECE 302	Managerial Economics: Production Managerial Economics: Consumption & Markets	3

Electives

Select 8 credits from the following courses (if not already above):		8
AGEC 301	Managerial Economics: Production	
AGEC 302	Managerial Economics: Consumption & Markets	

AGEC 410	Experiencing the Idaho Public Policy Making Process	
ECON 202	Principles of Microeconomics	
ENVS 225	International Environmental Issues Seminar	
GEOG 411	Natural Hazards and Society	
NRS 235	Society and Natural Resources	
NRS 364	Politics of the Environment	
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 462	Natural Resource Policy	
REM 456	Integrated Rangeland Management	
Total Hours		20

Courses to total 20 credits for this minor

Department of Agricultural Education, Leadership and Communications

James J. Connors, Dept. Chair (875 Perimeter Drive MS 2040; 1210 West 6th, 83844-2040; phone 208-885-6358; jconnors@uidaho.edu (ljconnors@uidaho.edu); www.uidaho.edu/cals/aee (http://www.uidaho.edu/cals/aee/)).

The mission of the Department of Agricultural Education, Leadership and Communications includes teaching, research, and service. The specific objectives of the department are:

1. to prepare educators for employment in teaching agriculture and extension programs
2. to provide service and direction to FFA in Idaho
3. to prepare for careers in general learning/ranching or entry level positions in agricultural industry and agribusiness
4. to provide an opportunity for graduate study in the areas of agricultural and extension education
5. to assist in providing in-service education for agricultural educators in Idaho
6. to provide service to related agencies and organizations for the support of education and the development of human resources
7. to conduct quality research in agricultural and extension education
8. to assist in maintaining viable agricultural education programs; and
9. to assist in the development of information and instructional materials for the support of agricultural educators and extension personnel.

Courses in animal science, agricultural economics, agricultural mechanics, entomological science, plant science, horticulture, and soil science will prepare graduates to teach these areas as secondary agriculture instructors or develop educational programs as county extension faculty. The agricultural education curriculum is approved by the State Board for Professional-Technical Education. Graduates who have completed a minimum of 28 credits in agricultural education and who meet the state certification requirements for a standard secondary teaching certificate are qualified to teach secondary agriculture. Government and agribusiness agencies that seek persons with training in agriculture and education provide employment opportunities for graduates of this curriculum. Courses provide students an opportunity to

develop employment opportunities in teaching agriculture, cooperative extension, and agribusiness occupations.

The department provides opportunities for professional growth and development to agricultural educators through a planned program of graduate study. The pursuit of an M.S. degree allows for the development of problem-solving skills through scientific investigation of appropriate research topics. Graduate work in agricultural and extension education is offered with the opportunity for students to elect options in agricultural sciences, extension education, professional-technical teacher education, international agricultural education, or other areas that parallel their career goals. Because of the diversity of research efforts by departmental faculty members, a graduate student has a wide variety of specializations from which to choose a thesis topic. Students with this degree are well prepared to move into a job market or to pursue a Ph.D. program at another institution.

Admission to a graduate program requires an undergraduate degree with a major in agricultural education or a closely related field. The department may require the Graduate Record Examination if there is insufficient information available to indicate that the student will be successful in graduate work.

The department welcomes inquiries about its programs and suggests that anyone interested in possible pursuit of a degree in agricultural and extension education should contact the department (telephone 208-885-6358).

Majors

- Agricultural Education (B.S.Ag.Ed.) (p. 105)
- Agricultural Science, Communication and Leadership (B.S.Ag.L.S.) (p. 107)

Minors

- Agricultural Extension Education Minor (p. 107)
- Agricultural Communications and Leadership Minor (p. 105)
- Human and Community Engagement Minor (p. 147) (offered collaboratively with the department of Family and Consumer Sciences (p. 137))
- International Agriculture Minor (p. 109)

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Agricultural and Extension Education. See the College of Graduate Studies (p. 293) section for the general requirements applicable to the M.S. degree.

- Agricultural Education M.S. (p. 107)

Agricultural Communications and Leadership Minor

Code	Title	Hours
AGED 251	Principles of Agricultural Communications and Leadership	3
AGED 450	Leading People and Teams	3
AGED 451	Communicating in Agriculture	3

AGED 481	Advanced Agricultural Communication and Leadership	3
Additional Elective Courses		8
AGED 252	Developing Collegiate and Community Organizations	
AGED 301	Undergraduate Research	
AGED 350	Leadership Event Coordination	
AGED 498	Internship	
CLDR 360	Leadership and Community Dynamics	
CLDR 480	Change and Power in a Global Society	
AGLS 494	CALS Peer Leaders	
AGLS 495	CALS Ambassadors	
Total Hours		20

Courses to total 20 credits for this minor

Agricultural Education (B.S.Ag.Ed.)

This major is approved by the State Board of Professional-Technical Education for the preparation of high school agriculture instructors. Graduates who have completed at least 28 credits in agricultural education and who meet the state certification requirements for a Standard Secondary Teaching Certificate are eligible to teach secondary agricultural science and technology in Idaho. Students must be admitted to the Teacher Education Program, which requires a grade-point average of at least 2.75, before being allowed to enroll in upper-division teacher education courses and participate in student teaching. The Idaho teaching certificate transfers to most states in the US. In addition, government and business agencies and the Cooperative Extension System that seek persons with education in both agriculture and education provide employment opportunities for graduates of this curriculum.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and the following:

Code	Title	Hours
AGED 180	Introduction to Agricultural Education	1
AGED 258	Experiential Learning and SAE Programs	1
AGED 351	Career and Technical Education	3
AGED 358	Supervising FFA and SAE Programs	3
AGED 451	Communicating in Agriculture	3
AGED 452	Methods of Teaching Agriculture	4
AGED 453	Program Planning in Secondary Agricultural Education	3
AGED 454	Facilities Organization and Management	2
AGED 460	Practicum: Secondary School Teaching in Agriculture	10
AGED 461	Student Teaching Portfolio	3
AGED 470	Proseminar in Agricultural Education	1
AGED 471	Senior Capstone in Agricultural Education	2
ASM 107	Beginning Welding	3
ASM 407	Advanced Welding	1
Select one of the following:		3
ASM 202	Agricultural Shop Practices	
ASM 210	Small Engines	
ASM 305	GPS and Precision Agriculture	

ASM 331	Electric Power Systems for Agriculture	
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ECON 202	Principles of Microeconomics	3
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
CHEM 101	Introduction to Chemistry	3
or CHEM 111	General Chemistry I	
CHEM 101L	Introduction to Chemistry Laboratory	1
or CHEM 111L	General Chemistry I Laboratory	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Electives (25 cr)		
<i>Must include a minimum of:</i>		
Agricultural Economics Electives		6
Animal Science Electives		6
Plant Science Electives		6
Horticulture Elective		3
Soils Elective		4
Total Hours		106-107

Courses to total 128 credits for this degree

Fall Term 1		Hours
AGED 180	Introduction to Agricultural Education	1
AVS 109	The Science of Animals that Serve Humanity	4
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
Humanistic and Artistic Ways of Knowing Course		3
MATH 137 OR MATH 143		3
Hours		17
Spring Term 1		
AGED 258	Experiential Learning and SAE Programs	1
AVS 222	Animal Reproduction and Breeding	3
BIOL 114	Organisms and Environments	4
EDCI 201	Contexts of Education	3
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Fall Term 2		
AGED 351	Career and Technical Education	3
EDSP 300	Educating for Exceptionalities	3
AGEC 278	Farm and Agribusiness Management	4
PLSC 102	The Science of Plants in Agriculture	3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		17
Spring Term 2		
ASM 107	Beginning Welding	3
BIOL 115	Cells and the Evolution of Life	3

BIOL 115L	Cells and the Evolution of Life Laboratory	1
ECON 202	Principles of Microeconomics	3
EDCI 301	Learning, Development, and Assessment	3
AGEC 289 OR AGECE 333		3
Hours		16
Fall Term 3		
AGED 358	Supervising FFA and SAE Programs	3
EDCI 302	Teaching Culturally Diverse Learners	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
Agricultural Elective, Major Elective Course		2
ASM 202 OR ASM 210 OR ASM 305 OR ASM 331		3
Hours		15
Spring Term 3		
ASM 210	Small Engines	3
AGED 451	Communicating in Agriculture	3
EDCI 410	Technology, Teaching and Learning	2
AGED 406	Exploring International Agriculture	3
PLSC 201 OR PLSC 300		3
Hours		14
Fall Term 4		
AGED 452	Methods of Teaching Agriculture	4
AGED 470	Proseminar in Agricultural Education	1
AGED 454	Facilities Organization and Management	2
EDCI 463	Literacy Methods for Content Learning	3
ASM 407	Advanced Welding	1
PLSC/Horticulture, Major Elective Course		3
Hours		14
Spring Term 4		
AGED 453	Program Planning in Secondary Agricultural Education	3
AGED 460	Practicum: Secondary School Teaching in Agriculture	10
AGED 461	Student Teaching Portfolio	3
AGED 471	Senior Capstone in Agricultural Education	2
Hours		18
Total Hours		128

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will explain biological, physical, and applied sciences relative to practical solutions for the agricultural industry.
2. Students will explain concepts relevant to production agriculture.
3. Students will explain plant and animal science, agricultural business management, and agricultural mechanics, as well as computer and other technology related to these areas.
4. Students will explain the process required to advise, oversee and operate a local FFA chapter and connect local programs to the Idaho State and National FFA organizations.
5. Students will develop a plan to organize and implement supervised agricultural experience programs including but not limited to working with parents, students, adults, and employers.
6. Students will create instruction in one or more of the following specialized occupational areas: agricultural production and marketing, agricultural equipment and supplies, agriculture product processing, ornamental horticulture and turf grass management (e.g. floriculture, greenhouse management), agricultural business planning

and analysis, natural resource management, environmental science, forestry, or small animal production and care.

7. Students will explain with the administrative duties related to being a secondary agriculture teacher (e.g., extended contract, state reporting procedures, FFA, and SAE).
8. Students will apply natural and physical science principles to practical solutions.
9. Students will create discussions related to production agriculture.
10. Students will demonstrate, as appropriate, content and best practices of plant and animal science; agricultural business management; and agricultural mechanics; and integrate computer and other technology related to these areas.
11. Students will advise, oversee, and operate a local FFA chapter in relationship to the Idaho State and National FFA organizations.
12. Students will organize and implement supervised agricultural experience programs including but not limited to working with parents, students, adults, and employers.
13. Students will observe administrative duties related to being a secondary agriculture teacher (e.g., extended contract, state reporting procedures, FFA, and SAE).
14. Students will describe how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and design and implement developmentally-appropriate and challenging learning experiences.
15. The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.
16. Students will collaborate to create environments that support individual and collaborative learning and that encourage positive social interaction, active engagement in learning, and self-motivation.
17. Students will describe the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and create learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.
18. Students will develop curriculum to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.
19. Students will apply multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.
20. Students will create instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.
21. Students will design instruction with a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections and to build skills to apply knowledge in meaningful ways.
22. Students will engage in ongoing professional learning and use evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapt practice to meet the needs of each learner.
23. Students will analyze benefits of leadership roles and opportunities to take responsibility for student learning, to collaborate with learners,

families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

Agricultural Education (M.S.)

Master of Science. Major in Agricultural Education.

Both thesis and non-thesis options are offered. The M.S. (non-thesis) degree is a terminal program designed to provide a broader preparation than the M.S. degree with a thesis. Of the minimum of 30 credits required under the non-thesis option, at least 18 must be in courses at the 500 level and the remainder may include 400 level courses in the majors and 300 and 400 level courses in supporting areas. A professional paper is optional at the discretion of the candidate's supervisory committee. A comprehensive examination is required, which may be written and/or oral.

Please see the Agricultural Education, Leadership and Communications Graduate Student Handbook for details and program requirements on earning this degree.

1. Students will develop philosophical views of agricultural education, communication, and leadership.
2. Students will disseminate information through both oral and written platforms.
3. Students will develop professionally through completion of an individualized professional growth plan.
4. Students will evaluate research in agricultural education, leadership, and communications.
5. Students will develop plans for individualized content knowledge growth in agricultural education, communications, and/or leadership.

Agricultural Extension Education Minor

Code	Title	Hours
AGED 180	Introduction to Agricultural Education	1
AGED 359	Developing 4-H Youth Programs	3
AGED 450	Leading People and Teams	3
AGED 451	Communicating in Agriculture	3
AGED 498	Internship	6
Total Hours		16

Courses to total 18 credits for this minor

Agricultural Science, Communication and Leadership (B.S.Ag.L.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) as well as the following courses:

Code	Title	Hours
Agricultural and Life Sciences Core (p. 100)		13
Agricultural Science, Communication and Leadership Courses		
AGED 180	Introduction to Agricultural Education	1
AGED 251	Principles of Agricultural Communications and Leadership	3

AGED 450	Leading People and Teams	3
AGED 481	Advanced Agricultural Communication and Leadership	3
AGED 498	Internship	5-10
CHEM 101 or CHEM 111	Introduction to Chemistry General Chemistry I	3
CHEM 101L or CHEM 111L	Introduction to Chemistry Laboratory General Chemistry I Laboratory	1
Select one of the following		4
BIOL 114	Organisms and Environments	
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	
Select one of the following:		3
MATH 143	College Algebra	
Select two of the following:		6
ENGL 202	Technical Writing I	
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
JAMM 121	Media Writing	
JAMM 225	Reporting I	
JAMM 350	Public Relations Writing and Production	

Foundational Ag Communications & Leadership Courses

Select 9 credits of the following:		9
AGED 252	Developing Collegiate and Community Organizations	
AGED 301	Undergraduate Research	
AGED 350	Leadership Event Coordination	
AGED 359	Developing 4-H Youth Programs	
CLDR 360	Leadership and Community Dynamics	
CLDR 480	Change and Power in a Global Society	

Subject Area Electives 24

Select 24 credits from 3 of the following of the following subject areas. A minimum of 12 credits must be upper-division (300 or 400). At least two areas must be from the College of Agricultural and Life Sciences (CALS). One area can be from the College of Natural Resources (CNR).

CALS Subject Matter Areas

Agricultural Economics (p. 519)
Agricultural System Management (p. 524)
Animal and Veterinary Science (p. 527)
Entomology (p. 612)
Family and Consumer Science (p. 620)
Food Science (p. 629)
Plant Science/Rangeland Ecology Management (p. 730)
Soils (p. 748)

CNR Subject Matter Areas

Forest Resources (p. 635)
Natural Resources (p. 710)
Natural Resources and Society (p. 711)
Wildlife Resources (p. 764)

Leadership & Communication Electives

Select 21 credits from the list of courses:		21
Any COMM Prefix (p. 567)		
Any JAMM Prefix (p. 667)		
AGED 252	Developing Collegiate and Community Organizations	
AGED 301	Undergraduate Research	
AGED 350	Leadership Event Coordination	
AGED 359	Developing 4-H Youth Programs	
AGED 407	Global Agricultural & Life Sciences Systems	
AGLS 494	CALS Peer Leaders	
AGLS 495	CALS Ambassadors	
CLDR 360	Leadership and Community Dynamics	
CLDR 480	Change and Power in a Global Society	
EDCI 410	Technology, Teaching and Learning	
MHR 311	Introduction to Management	
MHR 418	Managing Organization Design and Leading Changes	
NRS 311	Public Involvement in Natural Resource Management	
ORGS 305	Nonprofit Organizations	
ORGS 320	Budgeting for Small Organizations	
ORGS 407	Advanced Nonprofit Organizations	
ORGS 435	Personnel	
ORGS 441	Human Relations in the Workplace	
ORGS 450	Organizational Systems and Projects	

Total Hours 99-104

Courses to total 120 credits for this degree

Fall Term 1		Hours
AGED 180	Introduction to Agricultural Education	1
COMM 101	Fundamentals of Oral Communication	3
Social and Behavioral Ways of Knowing Course		3
Subject Area, Major Elective Course		3
MATH 143 OR MATH 160 OR MATH 170		3
COMM 101 OR COMM 150		2
Hours		15
Spring Term 1		Hours
ECON 202	Principles of Microeconomics	3
ENGL 102	Writing and Rhetoric II	3
Elective Course		3
Subject Area, Major Elective Course		3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		16
Fall Term 2		Hours
AGED 251	Principles of Agricultural Communications and Leadership	3
AGED 278	Farm and Agribusiness Management	4
2 credit Elective Course		2
(BIOL 115 AND BIOL 115L)		3
ENGL 202 OR ENGL 207 OR ENGL 313 OR ENGL 316 OR ENGL 317 OR ENGL 318 OR JAMM 121 OR JAMM 225 OR JAMM 350		3
Hours		15
Spring Term 2		Hours
Subject Area, Major Elective Course		3
Subject Area, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3

AGED 252 OR AGED 301 OR AGED 350 OR AGED 359 OR AGED 448 OR CLDR 360 OR CLDR 480	3
ENGL 202 OR ENGL 207 OR ENGL 313 OR ENGL 316 OR ENGL 317 OR ENGL 318 OR JAMM 121 OR JAMM 225 OR JAMM 350	3
Hours	15
Fall Term 3	
Leadership & Communication, Major Elective Course	3
Leadership & Communication, Major Elective Course	3
Leadership & Communication, Major Elective Course	3
Subject Area, Major Elective Course	3
AGED 252 OR AGED 301 OR AGED 350 OR AGED 359 OR AGED 448 OR CLDR 360 OR CLDR 480	3
Hours	15
Spring Term 3	
AGED 450 Leading People and Teams	3
AGED 451 Communicating in Agriculture	3
Subject Area, Major Elective Course	3
AGED 406 OR AGED 407	3
AGED 252 OR AGED 301 OR AGED 350 OR AGED 359 OR AGED 448 OR CLDR 360 OR CLDR 480	3
Hours	15
Fall Term 4	
Leadership & Communication, Major Elective Course	3
Leadership & Communication, Major Elective Course	3
Leadership & Communication, Major Elective Course	3
Subject Area, Major Elective Course	3
Humanistic and Artistic Ways of Knowing Course	3
Hours	15
Spring Term 4	
AGED 498 Internship	5
AGED 481 Advanced Agricultural Communication and Leadership	3
Subject Area, Major Elective Course	3
American Diversity Course	3
Hours	14
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will identify leadership skills associated with careers in the food, fiber, and natural resources system.
2. Students will develop an individualized plan to gather technical agriculture knowledge and skills to be successful in the food, fiber, and natural resources industry.
3. Students will investigate agricultural leadership and communications through an industry-based internship experience.
4. Students will develop a comprehensive knowledge of scientific and economic principles associated with agriculture.
5. Students will examine practical applications of leadership and communication in agricultural industry settings.
6. Students will create oral and written communications based on agricultural content.

International Agriculture Minor

Code	Title	Hours
AGED 406	Exploring International Agriculture	3
AGED 407	Global Agricultural & Life Sciences Systems	3
CLDR 480	Change and Power in a Global Society	3
Select at least 11 credits from the following:		11
AGED 447	International Development Economics	
AGED 481	Agricultural Markets in a Global Economy	
ANTH 350	Food, Culture, and Society	
COMM 335	Intercultural Communication	
GEOG 200	World Cultures and Globalization	
IS 225	International Environmental Issues Seminar	
POLS 237	Introduction to International Politics	
Foreign Language (4 credits max)		
Total Hours		20

Courses to total 20 credits for this minor

Department of Animal, Veterinary and Food Sciences

Robert Collier, Department Head (213 Ag Sci Bldg. 83844-2330; phone 208-885-9849).

Animal agriculture has a major role in providing the supply of high-quality food, not only for the people of the United States, but also for those of other nations. Food and fiber obtained from animals include meat, milk, eggs, wool, and many by-products. Knowledge and skills resulting from a college education in this field will permit the graduate to contribute to improved production and health of the nation's livestock including beef, sheep, dairy, swine, poultry, horses, and companion animals.

In addition to classrooms and laboratories located in the Agricultural Science Building, the department's facilities include production centers for dairy, beef, and sheep, as well as a meats laboratory and livestock judging pavilion. Several breeds of animals are maintained for instructional purposes. The academic program is designed to prepare students for a variety of important and rewarding career opportunities. For more specific information, get in touch with the department head (208-885-9849).

To prepare students for the varied types of occupations available in animal agriculture and food science, the Department of Animal, Veterinary and Food Sciences offers a Bachelor of Science degree in Animal Science with four options: Business, Dairy Science, Production, and Pre-veterinary. The Bachelor of Science degree in Food Science offers three options: Food Science, Dairy Foods Management, and Fermentation Science. Each of these majors, while providing the students with a sound background in animal and food biology and engineering of food, has its separate emphasis on complementary academic training. One of the strongest features of these programs is the flexibility provided.

Each major permits the student to plan the precise course of study that will best prepare him or her for the area of work that he or she desires to enter. The department also offers minors in Animal Science or Food Science for students desiring a background in animal agriculture or food science to complement their major field of study.

Animal Science

The B.S.A.V.S. Business Option is designed for students who desire a career as entry-level into management positions in livestock-related industries. This option is oriented toward business, economics, and agricultural economics, in addition to a sound background in production animal agriculture. With appropriate choices of elective courses, students can also prepare themselves for positions with financial institutions involved with the animal agriculture industry.

An option in Dairy Science (B.S.A.V.S.) helps prepare students for careers in one of Idaho's fastest growing industries. This option offers introductory and advanced course work and hands-on training at a modern dairy center. Specific courses are taught in dairy nutrition, forage crops, dairy reproduction and physiology, dairy cattle evaluation, dairy products and processing, physiology of lactation, herd health management, agriculture power and machines, and farm management. Students are eligible to participate in the Cooperative of University Dairy Students (CUDS) program.

The option in Production (B.S.A.V.S.) is designed for students who desire to pursue a career in livestock production, graduate work in one of the varied disciplines in animal sciences (nutrition, breeding, physiology, growth, endocrinology, meats, etc.), or for employment by companies that require intensive training in animal biology. This option is also excellent training for those interested in Cooperative Extension.

The Pre-Veterinary Option (B.S.A.V.S.) is offered for students interested in veterinary school or a graduate program involving any of the disciplines of animal biology. It is typically a 4-year program of study, but for a few students, the 3+1 program will be of interest. If, after successful completion of 99 credits of required courses (the first 3 years of the 4-year program), the student is admitted to a recognized college of veterinary medicine and completes the first year of veterinary school (equivalent of at least 32 credits), that first year will constitute the senior year at U of I and the student will be awarded a B.S.A.V.S. at U of I.

Food Science

The School of Food Science, jointly administered by the University of Idaho and Washington State University, offers courses of study in the undergraduate major field of food science. Students complete a prescribed course of study leading to the Bachelor of Science in Food Science with options in Food Science, Dairy Foods Management, and Fermentation Science.

Food science is the scientific discipline that supports the food and beverage manufacturing industry. It is a multidisciplinary science that applies biology, chemistry, physics, engineering, nutrition, and other sciences to improve the safety and quality of food products; create healthy food products; and design new, safer, and more sustainable food preservation methods. Food scientists strive to improve the quality and nutrition of foods through traditional and emerging preservation technologies. They conduct research to mitigate chemical and microbial risk factors in foods and to understand the causes of food deterioration and spoilage. Employed around the world by large and small food processing companies, food ingredient suppliers, food quality assurance and testing labs, federal and state governmental agencies, and academia, food scientists also work with existing and emerging companies preparing organic, natural, kosher, and halal food products.

Gaining a food science education provides students with a challenging career not only in the Pacific Northwest, but also nationally and internationally. Food science graduates begin careers in food plant

operations, food quality assurance, food safety microbiology, technical sales, food product development, regulatory affairs, or research in the food/allied industries or federal/state regulatory agencies. Food science students learn to convert raw agricultural commodities into high quality, safe, and nutritious food products - the complete farm-to-table process. As part of the B.S. degree, students receive training and learn skills relative to the preservation, safety, risk management, nutrition, chemistry, and sensory evaluation of foods. The food processing industry is continually challenged to improve food quality, as well as enhance the sustainable development of new foods, to better meet consumer demands and the nutritional needs of the world. In the first two years of college, students enroll in science courses and complete most general university requirements. (Note: many of the general university requirements and introductory science and math courses can be completed at community colleges.)

In the junior and senior years, the curriculum emphasizes courses in food processing, food chemistry and analysis, food microbiology, sensory evaluation, and other specialized areas such as the processing of cereal, dairy, wine, fruit, and vegetable products. Students with specific interests can gain additional education by taking elective courses, participating in internships with food companies, joining student clubs or competitions, or conducting a research project with a faculty member. Contact the Food Science advisor for more information.

A student graduating with a B.S. in Food Science should be able to: 1. Demonstrate a level of comprehension of Food Science concepts and analyses equivalent to or greater than that required by the Institute of Food Technologists Core Competencies Guidelines. 2. Critically evaluate and summarize a food science issue or problem. 3. Apply critical thinking and problem-solving skills to address current challenges in the food industry. 4. Communicate effectively in both written and oral format with an audience possessing varying degrees of food science knowledge.

The Department of Animal, Veterinary and Food Sciences offers a graduate program leading to the Master of Science degree with a major in Animal Science or Food Science and a Doctor of Philosophy degree with a major in Animal Physiology or Food Science. The department offers areas of specialization in nutrition, reproductive physiology, embryo physiology, animal growth and development, meat science, and animal diseases with orientation towards beef cattle, dairy cattle, horses, sheep, and fish. The department also participates in university interdisciplinary programs in reproductive biology and molecular and agricultural genetic engineering.

Graduate work in the department is designed to prepare the student for work in research, extension, teaching, and industry. Thesis projects are diverse in scope and range in design from studying fundamental biological questions to application of scientific knowledge to animal production and management and food processing. Facilities available for graduate student research include herds and flocks of major livestock breeds, ruminant nutrition and physiology laboratories, biomedical research laboratories, a university-operated dairy, a meat science laboratory, and a 500-head experimental feedlot. Active cooperation is maintained with federal research agencies located on and off campus.

Graduate student assistantships are available on a competitive basis each year. Inquiries should be directed to the department's graduate program coordinator.

Majors

- Animal and Veterinary Science (B.S.A.V.S.) (p. 111)
- Food Science (B.S.F.S.) (p. 116)

Minors

- Animal Science Minor (p. 116)
- Food Science Minor (p. 118)

Animal, Veterinary and Food Sciences Graduate Program

- Animal Physiology (Ph.D.) (p. 115)
- Animal Science (M.S.) (p. 115)
- Food Science (M.S.) (p. 117)
- Food Science (Ph.D.) (p. 118)

Animal and Veterinary Science (B.S.A.V.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and completion of the following course work and one of the following four options:

Code	Title	Hours
AVFS 101	Introduction to Animal, Veterinary and Food Sciences	1
AVS 109	The Science of Animals that Serve Humanity	4
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
AVS 305	Animal Nutrition	4
AVS 306	Feeds & Ration Formulation	3
AVS 306L	Feeds and Ration Formulation Laboratory	1
AVS 452	Physiology of Reproduction (AVS 452 required for PreVet Option)	3-4
or AVS 222	Animal Reproduction and Breeding	
AVS 330	Genetics of Livestock Improvement	3
AVS 371 & AVS 373	Anatomy and Physiology and Anatomy and Physiology Lab (AVS 371 & AVS 373 required for PreVet Option)	3-4
or AVS 267	Anatomy and Physiology of Domestic Animals	
AVS 450	Issues in Animal Agriculture	2
Select two of the following (one has to be AVS 472 or AVS 474)		6
AVS 466	Equine Science and Management	
AVS 472	Dairy Cattle Management (Required for Dairy Science Option)	
AVS 474	Beef Cattle Science	
AVS 476	Sheep Science	
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
Choose one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory (CHEM 111 & CHEM 111L required for PreVet Option)	

CHEM 277	Organic Chemistry I (CHEM 277 required for PreVet Option)	3
or CHEM 275	Carbon Compounds	
ENGL 317	Technical Writing II (ENGL 317 required for PreVet Option)	3
or ENGL 313	Business Writing	
STAT 251	Statistical Methods	3
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following options:		36-41
Business (p. 111)		
Dairy Science (p. 112)		
Production (p. 112)		
Science/Preveterinary (p. 112)		
Total Hours		90-98

A. Business Option

Code	Title	Hours
Select at least two of the following:		4-5
AVS 172	Principles and Practices of Dairy Science	
AVS 263	Live Animal and Carcass Evaluation	
AVS 268	Companion Animal Diseases	
AVS 274	Beef Feedlot Systems	
Select at least 14 credits of Upper Division Animal Science courses:		14
AVS 301	Undergraduate Research in Animal Science (6 credits max)	
AVS 317	Artificial Insemination and Pregnancy Detection	
AVS 318	Beef Calving Management	
AVS 363	Animal Products for Human Consumption	
AVS 411	Ruminant Nutrition	
AVS 463	Growth and Lactation	
AVS 471	Animal Disease Management	
AVS 475	Advanced Dairy Management	
AVS Third Species Production Course		
REM 300+ Rangeland Ecology and Management		
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
ECON 202	Principles of Microeconomics	3
Select at least 6 credits with at least 1 ACCT course:		6
ACCT 201	Introduction to Financial Accounting	
ACCT 202	Introduction to Managerial Accounting	
BUS 190	Integrated Business and Value Creation	
BLAW 265	Legal Environment of Business	
Select at least 6 credits of Upper Division Business Electives from the following subjects:		6
AGEC		
ACCT		
BLAW		
BUS		
ECON		
ENTR		

FIN	
MIS	
MHR	
MKTG	
OM	
Total Hours	40-41

Courses to total 120 credits for this degree

B. Dairy Science Option

Code	Title	Hours
AVS 172	Principles and Practices of Dairy Science	2
Select at least one of the following:		2-3
AVS 263	Live Animal and Carcass Evaluation	
AVS 268	Companion Animal Diseases	
AVS 274	Beef Feedlot Systems	
AVS 363	Animal Products for Human Consumption	4
AVS 411	Ruminant Nutrition	3
AVS 463	Growth and Lactation	3
AVS 471	Animal Disease Management	3
AVS 475	Advanced Dairy Management	3
Select at least 3 credits of Upper Division Animal Science courses:		3
AVS 301	Undergraduate Research in Animal Science (6 credits max)	
AVS 317	Artificial Insemination and Pregnancy Detection	
AVS 318	Beef Calving Management	
AVS Third Species Production Course		
REM 300+ Rangeland Ecology and Management		
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
ECON 202	Principles of Microeconomics	3
EPPN 154	Microbiology and the World Around Us	3
or BIOL 250	General Microbiology	
EPPN 155	Microbiology and the World Around Us: Laboratory	1
or BIOL 255	General Microbiology Lab	
Total Hours		37-38

Courses to total 120 credits for this degree

C. Production Option

Code	Title	Hours
Select at least two of the following:		4-5
AVS 172	Principles and Practices of Dairy Science	
AVS 263	Live Animal and Carcass Evaluation	
AVS 268	Companion Animal Diseases	
AVS 274	Beef Feedlot Systems	
Select at least 16 credits of Upper Division Animal Science courses:		16
AVS 301	Undergraduate Research in Animal Science (6 credits max)	
AVS 317	Artificial Insemination and Pregnancy Detection	
AVS 318	Beef Calving Management	
AVS 363	Animal Products for Human Consumption	
AVS 411	Ruminant Nutrition	

AVS 463	Growth and Lactation	
AVS 471	Animal Disease Management	
AVS 475	Advanced Dairy Management	
AVS Third Species Production Course		
REM 300+ Rangeland Ecology and Management		
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
ECON 202	Principles of Microeconomics	3
EPPN 154	Microbiology and the World Around Us	3
or BIOL 250	General Microbiology	
EPPN 155	Microbiology and the World Around Us: Laboratory	1-2
or BIOL 255	General Microbiology Lab	
REM 151	Rangeland Principles	3
Total Hours		37-39

Courses to total 120 credits for this degree

D. Science/Preveterinary Option

Code	Title	Hours
Select at least two of the following:		4-6
AVS 172	Principles and Practices of Dairy Science	
AVS 222	Animal Reproduction and Breeding	
AVS 263	Live Animal and Carcass Evaluation	
AVS 267	Anatomy and Physiology of Domestic Animals	
AVS 268	Companion Animal Diseases	
AVS 274	Beef Feedlot Systems	
PHYS 112	General Physics II	
PHYS 112L	General Physics II Lab	
Select at least 9 credits with at least 6 credits of Upper Division Animal Science courses:		9
AVS 301	Undergraduate Research in Animal Science (3 credits max)	
AVS 317	Artificial Insemination and Pregnancy Detection	
AVS 318	Beef Calving Management	
AVS 363	Animal Products for Human Consumption	
AVS 411	Ruminant Nutrition	
AVS 463	Growth and Lactation	
AVS 471	Animal Disease Management	
AVS 475	Advanced Dairy Management	
AVS Third Species Production Course		
BIOL 432	Immunology	
BIOL 447	Virology	
BIOL 474	Developmental Biology	
BIOL 483	Mammalogy	
CHEM 372	Organic Chemistry II	
REM 300+ Rangeland Ecology and Management		
BIOL 114	Organisms and Environments	4
BIOL 300	Survey of Biochemistry	3-4
or BIOL 380	Biochemistry I	
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 278	Organic Chemistry I: Lab	1
EPPN 154	Microbiology and the World Around Us	3

or BIOL 250	General Microbiology	
EPPN 155	Microbiology and the World Around Us: Laboratory	1-2
or BIOL 255	General Microbiology Lab	
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Select one of the following:		3
BIOL 310	Genetics	
& BIOL 315	and Genetics Lab	
GENE 314	General Genetics	
Total Hours		37-41

Courses to total 120 credits for this degree

Business Option

Fall Term 1		Hours
AVS 109	The Science of Animals that Serve Humanity	4
ENGL 101	Writing and Rhetoric I	3
AVFS 101	Introduction to Animal, Veterinary and Food Sciences	1
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
MATH 143 OR MATH 160 OR MATH 170		3
Hours		15
Spring Term 1		Hours
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 102	Writing and Rhetoric II	3
Oral Communication Course		2
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Fall Term 2		Hours
AGEC 278	Farm and Agribusiness Management	4
ECON 202	Principles of Microeconomics	3
STAT 251	Statistical Methods	3
ACCT 201 OR ACCT 202		3
AVS 172 OR AVS 263 OR AVS 268 OR AVS 274		2
Hours		15
Spring Term 2		Hours
AGEC 289	Agricultural Markets and Prices	3
AVS 222 OR AVS 452		3
(AVS 371 AND AVS 373)		3
CHEM 275 OR CHEM 277		3
AVS 172 OR AVS 263 OR AVS 268 OR AVS 274		2
ACCT 201 OR ACCT 202 OR BLAW 265 OR BUS 190		3
Hours		17
Fall Term 3		Hours
AVS 305	Animal Nutrition	4
AVS 330	Genetics of Livestock Improvement	3
American Diversity Course		3
UPDV AVS, Major Elective Course		3
Hours		13
Spring Term 3		Hours
AVS 306	Feeds & Ration Formulation	3
AVS 306L	Feeds and Ration Formulation Laboratory	1
UPDV AVS, Major Elective Course		4
Social and Behavioral Ways of Knowing Course		3
ENGL 313 OR ENGL 317		3
Hours		14
Fall Term 4		Hours
Elective Course		4

UPDV AVS, Major Elective Course	3	
Business Elective, Major Elective Course	3	
Humanistic and Artistic Ways of Knowing Course	3	
AVS 466 OR AVS 472	3	
Hours		16
Spring Term 4		Hours
AVS 450	Issues in Animal Agriculture	2
UPDV AVS, Major Elective Course		3
UPDV Business, Major Elective Course		3
International Course		3
AVS 474 OR AVS 476		3
Hours		14
Total Hours		120

Dairy Science Option

Fall Term 1		Hours
AVFS 101	Introduction to Animal, Veterinary and Food Sciences	1
AVS 109	The Science of Animals that Serve Humanity	4
AVS 172	Principles and Practices of Dairy Science	2
ENGL 101	Writing and Rhetoric I	3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
MATH 143 OR MATH 160 OR MATH 170		3
Hours		17
Spring Term 1		Hours
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 102	Writing and Rhetoric II	3
American Diversity Course		3
Oral Communication Course		2
Hours		16
Fall Term 2		Hours
ECON 202	Principles of Microeconomics	3
STAT 251	Statistical Methods	3
AGEC 278	Farm and Agribusiness Management	4
Humanistic and Artistic Ways of Knowing Course		3
AVS 263 OR AVS 268 OR AVS 274		2
Hours		15
Spring Term 2		Hours
AGEC 289	Agricultural Markets and Prices	3
AVS 222 OR AVS 452		3
CHEM 275 OR CHEM 277		3
(EPPN 154 AND EPPN 155) OR (BIOL 250 AND BIOL 255)		4
(AVS 371 AND AVS 373)		3
Hours		16
Fall Term 3		Hours
AVS 305	Animal Nutrition	4
AVS 330	Genetics of Livestock Improvement	3
Social and Behavioral Ways of Knowing Course		3
Elective Course		4
Hours		14
Spring Term 3		Hours
AVS 306	Feeds & Ration Formulation	3
AVS 306L	Feeds and Ration Formulation Laboratory	1
AVS 363	Animal Products for Human Consumption	4
AVS 471	Animal Disease Management	3
ENGL 313 OR ENGL 317		3
Hours		14
Fall Term 4		Hours
AVS 450	Issues in Animal Agriculture	2

AVS 472	Dairy Cattle Management	3
AVS 463	Growth and Lactation	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		2
Hours		13
Spring Term 4		
AVS 475	Advanced Dairy Management	3
AVS 411	Ruminant Nutrition	3
International Course		3
UPDV AVS or REM, Major Elective Course		3
AVS 466 OR AVS 474 OR AVS 476		3
Hours		15
Total Hours		120

Production Option

Fall Term 1		Hours
AVFS 101	Introduction to Animal, Veterinary and Food Sciences	1
AVS 109	The Science of Animals that Serve Humanity	4
ENGL 101	Writing and Rhetoric I	3
REM 151	Rangeland Principles	3
MATH 143 OR MATH 160 OR MATH 170		3
Hours		14
Spring Term 1		
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
ENGL 102	Writing and Rhetoric II	3
Oral Communication Course		2
AVS 172 OR AVS 263 OR AVS 268 OR AVS 274		2
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		15
Fall Term 2		
AGEC 278	Farm and Agribusiness Management	4
ECON 202	Principles of Microeconomics	3
STAT 251	Statistical Methods	3
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
AVS 172 OR AVS 263 OR AVS 268 OR AVS 274		3
Hours		17
Spring Term 2		
AGEC 289	Agricultural Markets and Prices	3
AVS 222 OR AVS 452		3
(AVS 371 AND AVS 373)		3
(CHEM 277 AND CHEM 278)		3
(EPPN 154 AND EPPN 155) OR (BIOL 250 AND BIOL 255)		4
Hours		16
Fall Term 3		
AVS 305	Animal Nutrition	4
AVS 330	Genetics of Livestock Improvement	3
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
(AVS 371 AND AVS 373)		4
Hours		17
Spring Term 3		
AVS 306	Feeds & Ration Formulation	3
AVS 306L	Feeds and Ration Formulation Laboratory	1
UPDV AVS elective, Major Elective Course		3
UPDV AVS elective, Major Elective Course		3
ENGL 313 OR ENGL 317		3
Hours		13
Fall Term 4		
AVS 450	Issues in Animal Agriculture	2

International Course		3
UPDV AVS elective, Major Elective Course		3
2 credits Elective Course		2
AVS 466 OR AVS 472		3
Hours		13
Spring Term 4		
UPDV AVS elective, Major Elective Course		3
UPDV AVS/REM, Major Elective Course		3
American Diversity Course		3
Humanistic and Artistic Ways of Knowing Course		3
AVS 474 OR AVS 476		3
Hours		15
Total Hours		120

Science/Preveterinary Option

Fall Term 1		Hours
AVFS 101	Introduction to Animal, Veterinary and Food Sciences	1
AVS 109	The Science of Animals that Serve Humanity	4
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
MATH 143 OR MATH 160 OR MATH 170		3
Hours		15
Spring Term 1		
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
COMM 101	Fundamentals of Oral Communication	3
Hours		14
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
STAT 251	Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course		3
AVS 172 OR AVS 222 OR AVS 263 OR AVS 267 OR AVS 268		2
Hours		17
Spring Term 2		
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
AVS Elective, Major Elective Course		3
AVS Elective, Major Elective Course		3
(EPPN 154 AND EPPN 155) OR (BIOL 250 AND BIOL 255)		4
Hours		14
Fall Term 3		
AVS 305	Animal Nutrition	4
AVS 330	Genetics of Livestock Improvement	3
AVS 371	Anatomy and Physiology	3
AVS 373	Anatomy and Physiology Lab	1
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Social and Behavioral Ways of Knowing Course		3
Hours		18
Spring Term 3		
AVS 306	Feeds & Ration Formulation	3
AVS 306L	Feeds and Ration Formulation Laboratory	1
ENGL 317	Technical Writing II	3
PHYS 112 & 112L	General Physics II and General Physics II Lab	4

Humanistic and Artistic Ways of Knowing Course (BIOL 310 AND BIOL 315)	3	3
Hours		17
Fall Term 4		
AVS 452 Physiology of Reproduction	4	
American Diversity Course	3	
BIOL 300 OR BIOL 380	3	
AVS 466 OR AVS 472	3	
Hours		13
Spring Term 4		
AVS 450 Issues in Animal Agriculture	2	
International Course	3	
UPDV AVS elective, Major Elective Course	3	
UPDV AVS elective, Major Elective Course	3	
AVS 474 OR AVS 476	3	
Hours		14
Total Hours		122

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will demonstrate basic knowledge of biological systems and its application in animal production, and will demonstrate in-depth knowledge of animal physiology, nutrition, breeding, and genetics.
2. Students will demonstrate information gathering, critical thinking, and demonstrate the ability to write and present scientific information in a professional manner.
3. Junior and senior students will demonstrate knowledge of animal production systems, production management skills, and the economic principles and practices essential for successful livestock production in senior animal production and management courses.
4. Senior students will demonstrate their critical thinking and soft skills ability through communication, presentations, teamwork, and leadership.

Animal Physiology (Ph.D.) Doctor of Philosophy. Major in Animal Physiology

To qualify for admission, candidates must fulfill the requirements of the Graduate College and have an overall grade-point average of 3.25 or better (on a 4.00 scale) for their undergraduate and graduate work. Applicants must submit scores received in the Graduate Record Examination (aptitude test).

Applicants who have completed their previous degrees in fields not closely related to animal and veterinary science may be required to complete deficiencies as determined by the candidate's committee and approved by the department's Graduate Committee.

The Ph.D. degree in animal physiology requires a minimum of 78 credits beyond the B.S. or professional degree, at least 52 credits of which must be in courses numbered 500 and above. Thirty-nine credits of the 78 must be in courses other than AVS 600. Courses at the 300-level may not be used as part of the Ph.D. degree program. Doctoral students are

required to complete the departmental graduate seminar each semester it is offered during the degree program. Students are also required to assist with teaching during their graduate training. Doctoral students must demonstrate competence in experimental design and data analysis prior to completion of the degree.

Please see the Animal, Veterinary, and Food Sciences Graduate Student Handbook for details and program requirements on earning this degree.

1. Graduates will demonstrate the ability to communicate effectively in written and spoken form to convey technical information and defend scientific findings in their areas of expertise.
2. Graduates will present on an independent topic area in animal science.
3. Graduates will demonstrate their expertise in the area of their research and demonstrate content knowledge, at expert levels, in general animal science.

Animal Science (M.S.) Master of Science. Major in Animal Science

The M.S. degree may be earned in animal science. To qualify for full admission, candidates must fulfill the requirements of the Graduate College and have an overall grade-point average of 3.0 or better (4.0 scale) for their undergraduate study. Acceptance of students not having this minimum grade-point average is possible, subject to recommendation by the department's Graduate Committee. Applicants must submit scores received on the Graduate Record Examination general (aptitude) test.

The M.S. degree requires a minimum of 30 credits, at least 18 of which must be in courses numbered 500 and above. No more than 10 of the 500-level credits may be from research and thesis. Courses at the 300 level in supporting fields may be used as part of the M.S. degree program. All graduate students are required to complete the departmental graduate seminar twice during the degree program. Students are also required to assist with teaching during their graduate training.

Applicants for the M.S. degree program in animal science who have completed their undergraduate program in fields that are not closely related to animal science will be required to complete deficiency courses as determined by the candidate's committee and approved by the department's Graduate Committee. The following are considered essential in an applicant's undergraduate program: chemistry and biochemistry (minimum of 12 credits), calculus, animal nutrition, animal breeding, physiology and/or endocrinology, one products course, and one animal production and management course. Specific animal production courses may be required as determined on an individual candidate basis.

Please see the Animal, Veterinary, and Food Sciences Graduate Student Handbook for details and program requirements on earning this degree.

1. Graduates will possess the ability to communicate effectively in written and spoken form to convey technical information and defend scientific findings.
2. Graduates will demonstrate in-depth technical expertise in their area of study and perform hypothesis-driven research.

Animal Science Minor

Code	Title	Hours
AVS 109	The Science of Animals that Serve Humanity	4
AVS 110	Science of Animal Husbandry	3
AVS 110L	Science of Animal Husbandry Lab	1
AVS 222 or AVS 452	Animal Reproduction and Breeding Physiology of Reproduction	3-4
Select 6 credits from the following:		6
AVS 305	Animal Nutrition	
AVS 306	Feeds & Ration Formulation	
AVS 330	Genetics of Livestock Improvement	
AVS 363	Animal Products for Human Consumption	
AVS 411	Ruminant Nutrition	
AVS 471	Animal Disease Management	
Select 3 credits from the following:		3
AVS 466	Equine Science and Management	
AVS 472	Dairy Cattle Management	
AVS 474	Beef Cattle Science	
AVS 476	Sheep Science	
Total Hours		20-21

Courses to total 20-21 credits for this minor

Food Science (B.S.F.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
AGED 101 or COMM 101	Verbal Communication in Agriculture, Food, and Natural Resources Fundamentals of Oral Communication	3
AVFS 101	Introduction to Animal, Veterinary and Food Sciences	1
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	5
BIOL 300 or BIOL 380	Survey of Biochemistry Biochemistry I	3-4
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4
COMM 233	Interpersonal Communication	3
ENGL 101	Writing and Rhetoric I	3
ENGL 102	Writing and Rhetoric II	3
FN 205	Concepts in Human Nutrition	3
FS 110	Introduction to Food Science	3
FS 220	Food Safety and Quality	3
FS 303	Food Processing	3
FS 304	Cereal Chemistry and Processing	3

FS 350	Instrumental and Sensory Analysis of Food	5
FS 363	Animal Products for Human Consumption	4
FS 416	Food Microbiology	3
FS 417	Food Microbiology Laboratory	2
FS 432	Food Engineering	3
FS 433	Food Engineering Lab	1
FS 489	Food Product Development (Food Product Development)	3
MATH 160 or MATH 170	Survey of Calculus Calculus I	4
PHIL 103 or PHIL 351	Introduction to Ethics Philosophy of Science	3
PHYS 111 & 111L	General Physics I and General Physics I Lab	4
STAT 251	Statistical Methods	3
Select one of the following:		3
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
Select at least 4 credits from the following:		4
ACCT 201	Introduction to Financial Accounting	
AGEC 278	Farm and Agribusiness Management	
AGEC 289	Agricultural Markets and Prices	
AVS 172	Principles and Practices of Dairy Science	
AVS 263	Live Animal and Carcass Evaluation	
BLAW 265	Legal Environment of Business	
BUS 190	Integrated Business and Value Creation	
ECON 202	Principles of Microeconomics	
FS 301	Food Mycology	
FS 398 or FS 498	Internship Internship	
FS 401	Industrial Fermentations	
FS 436	Principles of Sustainability	
FS 464	Food Toxicology	
PLSC 440	Advanced Laboratory Techniques	
AGEC 300+	Agricultural Economics	
BIOL 300+	Biology	
BUS 300+	Business	
ENTR 300+	Entrepreneurship	
MHR 300+	Management & Human Resources	
MIS 300+	Management Information Systems	
MKTG 300+	Marketing	
OM 300+	Operations Management	
Total Hours		95-96
Fall Term 1		Hours
AVFS 101	Introduction to Animal, Veterinary and Food Sciences	1
COMM 101 or AGED 101	Fundamentals of Oral Communication or Verbal Communication in Agriculture, Food, and Natural Resources	3
ENGL 101	Writing and Rhetoric I	3
FS 110	Introduction to Food Science	3
MATH 143	College Algebra	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		16

Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
FN 205	Concepts in Human Nutrition	3
MATH 160 OR MATH 170		4
Hours		14
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
STAT 251	Statistical Methods	3
Hours		16
Spring Term 2		
FS 220	Food Safety and Quality	3
PHIL 103 OR PHIL 351		3
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
Social and Behavioral Ways of Knowing Course		3
Hours		13
Fall Term 3		
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 300 OR BIOL 380		3
ENGL 317	Technical Writing II	3
or ENGL 313	or Business Writing	
or ENGL 316	or Environmental Writing	
FS 303	Food Processing	3
FS 302	Food Processing Lab (Food Processing Lab)	1
Hours		15
Spring Term 3		
COMM 233	Interpersonal Communication	3
FS 418	Oral Seminar in Food Science (Oral Seminar in Food Science)	1
FS 350	Instrumental and Sensory Analysis of Food	5
FS 432	Food Engineering	3
FS 433	Food Engineering Lab	1
ACCT 201, AGECE 289, BLAW 265, BUS 190, ECON 202, FS 113, FS 301, FS 398 or 498, FS 401, FS 402, FS 429, FS 430, FS 436, FS 464, FS 465, FS 466, PLSC 440, AGECE 300+, BIOL 300+, BUS 300+, ENTR 300+, MHR 300+, MIS 300+, MKTG 300+, OM 300+		2
Hours		15
Fall Term 4		
FS 416	Food Microbiology	3
FS 417	Food Microbiology Laboratory	2
FS Electives		7
ACCT 201, AGECE 278, AVS 172, AVS 263, BLAW 265, BUS 190, ECON 202, FS 113, FS 301, FS 398 or 498, FS 401, FS 402, FS 429, FS 430, FS 436, FS 464, FS 465, FS 466, PLSC 440, AGECE 300+, BIOL 300+, BUS 300+, ENTR 300+, MHR 300+, MIS 300+, MKTG 300+, OM 300+		3
Hours		15
Spring Term 4		
FS 304	Cereal Chemistry and Processing	3
FS 363	Animal Products for Human Consumption	4
FS 489	Food Product Development (Food Product Development)	3
International Course		3

American Diversity	3
Hours	16
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Graduating seniors earning a degree in Food Science should be able to demonstrate a level of comprehension of Food Science concepts and analyses equivalent to or greater than that required by the Institute of Food Technologists Core Competencies Guideline.

Graduating seniors earning a degree in Food Science should be able to apply critical thinking and problem-solving skills to address current challenges in the food industry.

Graduating seniors earning a degree in Food Science should be able to communicate effectively in both written and oral format with an audience possessing varying degrees of food science knowledge.

Food Science (M.S.) Master of Science. Major in Food Science.

Thesis and non-thesis options are offered.

- Thesis option** : University M.S. degree requirements apply along with specific department requirements for the M.S. in food science as described on the department webpage (<https://www.uidaho.edu/cals/animal-veterinary-and-food-sciences/ms-food-science> (<https://www.uidaho.edu/cals/animal-veterinary-and-food-sciences/ms-food-science/>)). The degree will prepare students for a variety of careers in the food and related industries, as well as for further academic studies. Each student will design a study plan in consultation with an advisor and thesis committee and present a thesis proposal to their committee. The degree program emphasizes research, and a thesis is required for graduation. An oral examination covering graduate coursework and thesis research is required during the student's final semester.
- Non-thesis option** : The non-thesis degree is designed to provide students with a broad perspective in food science. The student should have career goals that do not include a research emphasis. University M.S. degree requirement apply plus additional requirements described on the department webpage (<https://www.uidaho.edu/cals/animal-veterinary-and-food-sciences/ms-food-science> (<https://www.uidaho.edu/cals/animal-veterinary-and-food-sciences/ms-food-science/>)). The non-thesis option requires a minimum of 33 credits, the appointment of a graduate committee, and a final oral examination. Along with specific course requirements, the student is required to complete a substantial project, paper, or presentation to demonstrate ability for independent work and critical thinking. Students are not eligible for the non-thesis option if they have been supported on a graduate assistantship.

Please see the Animal, Veterinary, and Food Sciences Graduate Student Handbook for details and program requirements on earning this degree.

1. Exhibit oral and written communications skills needed to accurately and efficiently convey technical information and defend scientific findings in both scientific and lay settings.
2. Demonstrate a comprehensive and fundamental understanding of food science knowledge and principles.
3. Exhibit oral and written communications skills needed to accurately and efficiently convey technical information and defend scientific findings in both scientific and lay settings.
4. Appropriately design and conduct research experiments, and objectively analyze interpret, organize, and evaluate research findings.

Food Science (Ph.D.)

Doctor of Philosophy. Major in Food Science.

University Ph.D. requirements apply, along with specific departmental requirements described on the department webpage (www.sfs.wsu.edu/graduate-program/ui-graduate-students/phd-req-ui (<http://www.sfs.wsu.edu/graduate-program/ui-graduate-students/phd-req-ui/>)), for a Ph.D. in food science. Admission to the doctoral program is based on compatibility of the student's research interests with those of the major professor, availability of research support, and the student's academic record and potential. An oral preliminary exam and written dissertation proposal are required prior to admission to final candidacy for the degree. All candidates prepare a dissertation based on independent laboratory research and defend it as part of the final oral exam. Publication of data from the dissertation in a peer-reviewed scientific journal is expected. Participation in research seminars and department teaching programs is designed to prepare students for professional opportunities.

Please see the Animal, Veterinary, and Food Sciences Graduate Student Handbook for details and program requirements on earning this degree.

1. Graduates will be able to conduct innovative and high quality research to solve emerging problems in food science by:
 - a. Demonstrating a fundamental understanding of food science knowledge and principles.
 - b. Applying scientific knowledge to assess and solve food science problems.
 - c. Exhibiting communication skills to convey technical information and defend scientific findings.
 - d. Designing and conducting scientific experiments and analyzing research findings.
2. Graduates will have the professional and leadership skills for entry-level positions in food and allied industries, government, or academia.

Food Science Minor

A minor in food science will provide undergraduates with an introduction to the discipline of food science and technology. The minor is designed to supplement technical or business skills obtained in other majors. The minor will allow a student to broaden his or her educational background and enhance employment options in the food industry.

Code	Title	Hours
FS 110	Introduction to Food Science	3
or FS 220	Food Safety and Quality	
FS 303	Food Processing	3

FS 416	Food Microbiology	3
FS 417	Food Microbiology Laboratory	2
Select additional courses selected from the following:		9
FS 406	Evaluation of Dairy Products	
FS 432	Food Engineering	
FS 433	Food Engineering Lab	
FS 436	Principles of Sustainability	
FS 464	Food Toxicology	
Total Hours		20

Courses to total 20 credits for this minor

Department of Entomology, Plant Pathology and Nematology

Stephen Cook, Department Head (Agricultural Science Bldg. Room 242, 875 Perimeter Drive MS 2329, Moscow, ID 83844-2329; phone 208-885-2722).

The Department of Entomology, Plant Pathology and Nematology (EPPN) supports the Land Grant mission of the University of Idaho through our statewide programs of teaching, research, and extension about insects and their relatives, plant pathogens and diseases, and nematodes. EPPN faculty include one of the fourteen University Distinguished Professors, an honorific rank reserved for those Professors whose internationally recognized excellence has brought greatest distinction to the University of Idaho.

Our undergraduate teaching program includes a new major which leads to the Bachelor of Science in Global Disease Ecology. A Bachelor of Science in Global Disease Ecology will support students interested not only in traditional health careers, but also other career paths, including but not limited to health policy and regulation, global and public health, animal welfare, plant pathology, microbiology, food and water quality, sustainable agriculture, sustainable forestry, and environmental protection. This degree will provide the opportunity for students to develop tools to solve problems in real-world scenarios. Our faculty offer Directed Study, Special Topics and Seminar classes to enable students to specialize for future advanced education at the graduate level. Students in the Global Disease Ecology major will gain research experience outside the classroom by working with faculty across the university. EPPN faculty located on campus in Moscow and off campus at University of Idaho Research and Extension Centers located at Aberdeen, Kimberly and Parma, Idaho are ready and willing to support undergraduate research. There are also opportunities for internships at the William F. Barr Entomological Museum, one of the most significant scholarly resources for insect species diversity in the Pacific Northwest with its collection of more than one million insect specimens. For a personal tour of the Barr Museum, contact Dr. Luc Leblanc, Curator, at lleblanc@uidaho.edu.

We offer graduate programs leading to Master of Science and Doctor of Philosophy degrees in Entomology and a Master of Science degree in Plant Pathology. Our EPPN faculty expertise is especially strong in interdisciplinary research approaches to arthropod-borne infectious agents of plants, animals and humans, insect behavior and chemical ecology, etiology and management of plant diseases, and integrated pest management. Our graduates go on to research, teaching, extension, and consulting careers in academia, industry, and small business. For more information about EPPN graduate programs in Entomology, contact Professor Mark Schwarzlander, Director of EPPN Graduate Studies,

markschw@uidaho.edu. For more information about EPPN graduate programs in Plant Pathology, contact Professor Brenda Schroeder, bschroeder@uidaho.edu.

EPPN multidisciplinary research programs advance the fundamental science of our disciplines while contributing to the solution of real-world problems about food systems, environmental quality, and public health. Faculty research is regularly funded by more than \$10 million via grants awarded by national, state, regional, and international sources. Our statewide Extension and outreach programs improve the lives of Idahoans and advance the public good by extending research-based knowledge for practical implementation throughout the state and the nation. Our printed and online Extension publications reach tens of thousands of Idahoans annually, and EPPN faculty regularly hold workshops, field days, seminars, and other outreach events reaching thousands every year.

Majors

- Entomology (B.S.Ag.L.S.) (p. 119)
- Global Disease Ecology (B.S.) (p. 121)

Minors

- Entomology Minor (p. 121)
- Plant Protection Minor (p. 123)

Entomology, Plant Pathology and Nematology Graduate Programs

- Entomology (M.S.) (p. 120)
- Entomology (Ph.D.) (p. 120)
- Plant Pathology (M.S.) (p. 122)

Entomology (B.S.Ag.L.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
Agricultural and Life Sciences Core (p. 100)		13
Entomology Courses		
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213 or PLSC 205	Structure and Function Across the Tree of Life General Botany	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 275 or CHEM 277	Carbon Compounds Organic Chemistry I	3
COMM 101	Fundamentals of Oral Communication	3
ENT 322	General and Applied Entomology	4
ENT 400	Seminar	1

ENT 438	Pesticides in the Environment	3
ENT 440	Insect Identification	4
ENT 441	Insect Ecology	3
PLP 415 or SOIL 425	Plant Pathology Microbial Ecology	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 207	Introduction to Biotechnology	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
Select 3 credits of Biotechnology electives		3
Select 5 credits of Entomology electives		5
Select 9 credits of Life Science electives		9
Select 4 credits of Mathematics electives		4
Select one of the following:		3-5
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
BIOL 300 or BIOL 380	Survey of Biochemistry Biochemistry I	
CHEM 253 & CHEM 254	Quantitative Analysis and Quantitative Analysis: Lab	
Select one of the following:		3-4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	
GENE 314	General Genetics	
Total Hours		112-116
Courses to total 128 credits for this degree		
Fall Term 1		Hours
PLSC 102	The Science of Plants in Agriculture	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
Humanistic and Artistic Ways of Knowing Course		3
MATH 143 OR MATH 160 OR MATH 170		3
Hours		15

Spring Term 1		
BIOL 114	Organisms and Environments	4
ENGL 102	Writing and Rhetoric II	3
Mathematics, Major Elective Course		4
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		15
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
ENT 322	General and Applied Entomology	4
PLSC 207	Introduction to Biotechnology	3
Hours		16
Spring Term 2		
STAT 251	Statistical Methods	3
CHEM 275 OR CHEM 277		3
(PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L)		4
BIOL 213 OR PLSC 205		4
(EPPN 154 AND EPPN 155) OR (BIOL 250 AND BIOL 255)		4
Hours		18
Fall Term 3		
ECON 202	Principles of Microeconomics	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
Life Science, Major Elective Course		3
PLP 415 OR SOIL 425		3
ENGL 207 OR ENGL 313 OR ENGL 316 OR ENGL 317 OR ENGL 318		3
Hours		16
Spring Term 3		
AGED 278	Farm and Agribusiness Management	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
AGED 451	Communicating in Agriculture	3
AGED 406 OR AGED 407		3
Hours		18
Fall Term 4		
PLSC 400	Seminar	1
ENT 441	Insect Ecology	3
Social and Behavioral Ways of Knowing Course		3
Life Science, Major Elective Course		3
Entomology, Major Elective Course		3
(BIOL 310 AND BIOL 315)		3
Hours		16
Spring Term 4		
ENT 440	Insect Identification	4
ENT 438	Pesticides in the Environment	3
Biotechnology, Major Elective Course		3
Entomology, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Hours		19
Total Hours		133

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the

Registrar's Office regarding your official degree/certificate completion status.

1. The student will demonstrate knowledge of the defining characteristics, diversity, and ecological role of insects.
2. The student will be able to describe positive and negative impacts of insects on human health, ecological health, agriculture, and the national and global economies.

Entomology (M.S)

Master of Science. Major in Entomology. (Thesis and Non-Thesis Options)

Admission to graduate programs in entomology requires an undergraduate degree, usually in some field of biology. Specific requirements for each degree are determined by the student's graduate committee. Candidates for the M.S. with zoology or entomology course deficiencies in their undergraduate program may be required to list those courses as deficiencies on their M.S. program.

Please see the Entomology, Plant Pathology, and Nematology Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will advance the science of entomology and contribute to the solution of emerging problems in entomology by designing and conducting hypothesis-based research.
2. The student will demonstrate competence in standard entomological research methods and advanced research tools and technologies.
3. The student will contribute in a meaningful way as a member of interdisciplinary research teams that address complex issues.
4. The student will demonstrate effective oral and written communication skills among diverse audiences of science professionals and lay stakeholders.
5. The student will demonstrate broad understanding of fundamental principles and core knowledge in entomology and affiliated sciences.
6. The student will demonstrate in-depth expertise in an entomological concentration area.
7. The student will critically apply knowledge and expertise to the analysis and interpretation of novel problems in entomology; synthesize integrative conclusions and generate objective solutions.

Entomology (Ph.D.)

Doctor of Philosophy. Major in Entomology.

University Ph.D. requirements apply. Additional specific requirements are determined by the student's graduate committee.

Please see the Entomology, Plant Pathology, and Nematology Graduate Student Handbook for details and program requirements on earning this degree.

1. With a high level of independence and sophistication, advance the science of entomology and contribute to the solution of emerging problems in entomology by designing and conducting hypothesis-based research.
2. Demonstrate competence in standard entomological research methods and advanced research tools and technologies.

3. Contribute in a meaningful way as a member of interdisciplinary research teams that address complex issues.
4. Demonstrate comprehensive understanding of fundamental principles and core knowledge in entomology and affiliated sciences.
5. Demonstrate in-depth expertise in an entomological concentration area.
6. Critically apply knowledge and expertise to the analysis and interpretation of novel problems in entomology; synthesize integrative conclusions and generate objective solutions.

Entomology Minor

Code	Title	Hours
ENT 322	General and Applied Entomology	4
Select 16 credits of Entomology electives		16
Total Hours		20

Courses to total 20 credits for this minor

Global Disease Ecology (B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.S. degree, and:

Code	Title	Hours
Global Disease Ecology Core Courses		
AVS 109	The Science of Animals that Serve Humanity	4
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
ENGL 102	Writing and Rhetoric II	3
ENT 322	General and Applied Entomology	4
PLSC 102	The Science of Plants in Agriculture	3
PHIL 103	Introduction to Ethics	3
SOC 101	Introduction to Sociology	3
SOIL 205	The Soil Ecosystem	3
STAT 251	Statistical Methods	3
MATH 160	Survey of Calculus	4
	or MATH 170 Calculus I	
Choose one of the following:		3
CHEM 275	Carbon Compounds	
CHEM 277	Organic Chemistry I	
Choose one of the following:		3
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
Choose one of the following:		3
BIOL 310	Genetics	
GENE 314	General Genetics	
Choose one of the following:		4

EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Choose one of the following:		3
BIOL 300	Survey of Biochemistry	
BIOL 380	Biochemistry I	
Required Courses		
AVS 268	Companion Animal Diseases	2
AVS 371	Anatomy and Physiology	3
BIOL 312	Molecular and Cellular Biology	3
BIOL 444	Genomics	3
BIOL 447	Virology	3
ENT 438	Pesticides in the Environment	3
EPPN 110	Introduction to Global Disease Ecology	2
EPPN 220	Global Disease Ecology Seminar	2
EPPN 440	Research Practicum	3
PLSC 207	Introduction to Biotechnology	3
Choose one of the following:		3
BIOL 314	Ecology and Population Biology	
BIOL 426	Systems Biology	
Choose one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
Choose one of the following:		3
SOIL 425	Microbial Ecology	
ENT 441	Insect Ecology	
Choose one of the following:		3
ENT 411	Veterinary & Medical Entomology	
ENT 476	Medical Parasitology	
Select 3 credits from the following:		3
AGED 263	History of U.S. and World Agriculture	
AGED 406	Exploring International Agriculture	
AGED 407	Global Agricultural & Life Sciences Systems	
AGED 450	Leading People and Teams	
AGED 451	Communicating in Agriculture	
AGEC 356	Agricultural and Rural Policy	
AGEC 477	Law, Ethics, and the Environment	
ANTH 462	Human Issues in International Development	
CLDR 360	Leadership and Community Dynamics	
CLDR 480	Change and Power in a Global Society	
COMM 101	Fundamentals of Oral Communication	
AGED 101	Verbal Communication in Agriculture, Food, and Natural Resources	
COMM 335	Intercultural Communication	
ENVS 448	Drinking Water and Human Health	
HIST 379	History of Science II: 1700-Present	
HIST 380	Disease and Culture: History of Western Medicine	
HIST 424	American Environmental History	

IS 322	International Environmental Governance	
PSYC 473	Blood and Airborne Pathogens: HIV/STDs/ Hepatitis/TB	
SOC 340	Environmental Sociology and Globalization	
SOC 341	Science, Technology, and Society	
SOC 350	Food, Culture, and Society	
Select 3 credits from the following:		3
AVS 471	Animal Disease Management	
BIOL 432	Immunology	
FISH 424	Fish Health Management	
GEOG 313	Global Climate Change	
GEOG 350	Sustainability of Global Development	
GEOG 360	Population Dynamics and Distribution	
GEOG 430	Climate Change Ecology	
PLP 415	Plant Pathology	

Total Hours **108**

Courses to total 120 credits for this degree.

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
AVS 109	The Science of Animals that Serve Humanity	4
MATH 143	College Algebra	3
PHIL 103	Introduction to Ethics	3
SOC 101	Introduction to Sociology	3
Hours		16

Spring Term 1		Hours
BIOL 114	Organisms and Environments	4
COMM 101 or AGED 101	Fundamentals of Oral Communication or Verbal Communication in Agriculture, Food, and Natural Resources	3
ENGL 102	Writing and Rhetoric II	3
EPPN 110	Introduction to Global Disease Ecology	2
MATH 160	Survey of Calculus	4
Hours		16

Fall Term 2		Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
PLSC 102	The Science of Plants in Agriculture	3
ECON 201 or ECON 202	Principles of Macroeconomics or Principles of Microeconomics	3
EPPN 220	Global Disease Ecology Seminar	2
Hours		12

Spring Term 2		Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
STAT 251	Statistical Methods	3
EPPN 154	Microbiology and the World Around Us	3
EPPN 155	Microbiology and the World Around Us: Laboratory	1
Hours		16

Fall Term 3		Hours
BIOL 310	Genetics	3
AVS 371	Anatomy and Physiology	3
ENT 322	General and Applied Entomology	4
PLSC 207	Introduction to Biotechnology	3
BIOL 314 OR (ENGL 207 OR ENGL 313 OR ENGL 316 OR ENGL 317 OR ENGL 318)		3
Hours		16

Spring Term 3		Hours
BIOL 312	Molecular and Cellular Biology	3
CHEM 277 or CHEM 275	Organic Chemistry I or Carbon Compounds	3
EPPN 440	Research Practicum	3
SOIL 205	The Soil Ecosystem	3
BIOL 314 OR (ENGL 207 OR ENGL 313 OR ENGL 316 OR ENGL 317 OR ENGL 318)		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		18

Fall Term 4		Hours
BIOL 300 or BIOL 380	Survey of Biochemistry or Biochemistry I	3
BIOL 444	Genomics	3
ENT 441	Insect Ecology	3
AVS 268	Companion Animal Diseases	2
American Diversity Course		3
Hours		14

Spring Term 4		Hours
AGED 406	Exploring International Agriculture (or other International Course)	3
ENT 438	Pesticides in the Environment	3
ENT 476 or ENT 411	Medical Parasitology or Veterinary & Medical Entomology	3
PLP 411 or BIOL 447	Viruses and Virus Diseases of Plants or Virology	3
AVS 471 OR BIOL 432 OR FISH 424 OR GEOG 313 OR GEOG 350 OR GEOG 360 OR GEOG 430 OR PLP 415		3
Hours		15
Total Hours		123

1. Global Disease Ecology students will learn to recognize, define and differentiate the causes and types of human, animal and plant diseases and apply this information using diverse thinking strategies to address real-world issues.
2. Global Disease Ecology students will be able to integrate information across the scientific disciplines including to implement disease control practices, solve problems, and make decisions that impact the sustainability of human health.
3. Global Disease Ecology students will be able to convey knowledge using verbal and non-verbal methods of communication in a respectful manner that reflects our complex society.

Plant Pathology (M.S.)

Master of Science. Major in Plant Pathology.

Code	Title	Hours
PLP 515	Plant Pathology	3
PLP 516	Plant Pathology Lab	1
PLP 511	Viruses and Virus Diseases of Plants	3
PLP 522	Plant Bacteriology	3
PLP 501	Seminar	2
PLP 502	Directed Study ¹	3
Select one course in applied entomology		2-3
Total Hours		17-18

¹

Three credits of PLP Directed Study (PLP 502) are required and can be delivered by any member of the EPPN faculty. Credits earned in other Plant Pathology courses, earned in another school, or earned through correspondence study may be substituted for directed study credits.

1. Plant Pathology graduate students will learn to recognize, define, and differentiate the causes and types of plant diseases and apply this information using diverse thinking strategies to address real-world issues.
2. Plant Pathology graduate students will be able to integrate information across the scientific disciplines including Plant Pathology, Entomology, and Plant Sciences to implement disease control practices, solve problems, and make decisions that impact agriculture.
3. Plant Pathology graduate students will be able to convey knowledge using verbal and non-verbal methods of communication in a respectful manner that reflects our complex society.

Plant Protection Minor

Code	Title	Hours
ENT 322	General and Applied Entomology	4
PLP 415	Plant Pathology	3
PLSC 338	Organic and Conventional Weed Management	4
Choose 9 credits in ENT, PLP, or PLSC		9
<i>Suggested Courses</i>		
PLSC 410	Invasive Plant Biology	
PLSC 438	Pesticides in the Environment	
ENT Electives (p. 612)		
PLP Electives (p. 729)		
PLSC Electives (p. 730)		
Total Hours		20

Courses to total 20 credits for this minor

Department of Plant Sciences

Juliet Marshall, Chair (Aberdeen, ID; phone 208-885-2122; plantsciences@uidaho.edu).

The Department of Plant Sciences is in the College of Agricultural and Life Sciences. We offer a B.S. degree in Plant Science within which students may focus on majors tailored to the needs of their educational and career goals in agriculture and plant sciences. The four majors include Biotechnology and Plant Genomics, Crop Management, Crop Science, and Horticulture and Urban Agriculture. At the graduate level, we offer M.S. and Ph.D. degrees in Plant Science.

Our faculty and staff are committed to helping students develop skills needed for professional careers in theoretical and applied sciences to increase future crop production and agricultural sustainability. In addition, we offer courses and laboratory experiences in the use of biotechnology and modern plant breeding to improve and protect the major crops in the Pacific Northwest.

Undergraduate Degree Program

B.S. Degree in Plant Science

The degree offers students broad-based preparation in crop science and management, horticulture, plant biotechnology, plant breeding and genetics, and weed science. The four majors in this degree program are:

Biotechnology and Plant Genomics

Students in the Biotechnology and Plant Genomics major will gain experience with the latest molecular genetic techniques to address food

and energy needs of the United States and world in the 21st century. Students will learn how scientists investigate and manipulate genetic information at the molecular level to create and select crop plants with improved yield, nutritional value, insect and disease resistance, and temperature tolerance to address the needs of today's farmers and the challenges brought on by the ever-growing world population, competing demands for water, and threats brought on by climate change. Our students are offered numerous opportunities to participate in research projects in our plant biotechnology laboratories. This major prepares students for graduate education or for professional careers in industries that routinely employ genomics, genetic engineering, marker-assisted plant breeding, plant genetics, molecular biology, tissue culture, and molecular responses to disease.

Crop Management

The Crop Management major is new and designed to meet high demands for graduates qualified in applied field agronomy, production agriculture and production management, and business decision-making that arises in local and nationwide agriculture. Future expanding food and energy needs will require crop production managers and farm managers to ensure high volume and high quality of agricultural products. Students who have an interest in management of crops should enroll in this major rather than crops sciences, which requires more science courses. In addition, students majoring in Crop Management will be educated in applied crop production and management, combined with courses in agricultural economics and farming systems. This major will be particularly attractive to students who wish to be employed in applied production agriculture. Graduates will be well-rounded and prepared to manage family or large corporate agro-businesses and work as field agronomists, crop production managers, and farm managers.

Crop Science

Students in the Crop Science major receive a science-based education in a wide range of disciplines aimed at solving theoretical and applied challenges relating to increasing agricultural productivity and developing systems that advance agriculture sciences into the future. Demand for increased food production is ever present and to compete, agriculture needs to develop new crop genetics and agronomic practices that maximize output while reducing crop inputs and the agricultural footprint on the environment. This major combines physical and biological sciences and related subjects to develop innovative solutions to a wide range of problems that will be met by future agriculture. Courses emphasize environmental concerns, ecological relationships, and sustainability of agricultural systems. This major will prepare students for graduate education or professional careers in field agronomy, agricultural research, plant protection, agricultural consulting, plant breeding and genetics, seed production and certification, and weed science.

Horticulture and Urban Agriculture

The Horticulture and Urban Agriculture major is designed to provide students with a background in production of various horticultural crops in rural and urban locations or experience with care of managed landscapes including parks and sports turf. Students can tailor horticulture course selection to specialize in a particular horticulture career. Management of horticultural crops that are economically significant to Idaho and the nation are emphasized in various courses. Many facets of horticulture, including horticultural crop production, can be studied, particularly since food security and sustainable production practices are needed if graduates are to meet the challenges posed by increased urbanization and more costly resources needed for plant production. Students are prepared for graduate studies or professional careers in management and operation of commercial greenhouses, nurseries, orchards, vineyards or vegetable farms. Students also have the opportunity to focus on

managing and maintaining the various components of urban landscapes including trees, shrubs, herbaceous plantings and turfgrass, and urban food production.

Our degree offerings are designed to prepare students for rewarding careers in public or private enterprises or for entrance into graduate and professional programs. We offer students the opportunity to work closely with faculty in classroom, laboratory, and field situations. Our faculty members care about our students' individual needs and interests and offer additional specialization through directed study, special topics, seminars, and other courses as needed. An internship program is available to provide students with practical job experience and to open doors for future careers. In addition, we coordinate closely with the Departments Soil and Water Systems, Entomology, Plant Pathology and Nematology, Animal and Veterinary Science, and Agricultural Economics and Rural Sociology to broaden education offerings for our students.

Our students have access to the Lambert-Erickson Weed Herbarium that houses one of the nation's outstanding weed collections with all life stages of weeds represented. We have a state-of-the-art biotechnology facility with specially-equipped laboratories for histology, anatomy, and physiology, as well as greenhouse growing space and growth chambers/rooms with controlled temperature and light-programming capabilities. All these facilities can become part of each student's educational experiences. The University has 1,145 acres located close to campus for field crops and livestock. Excellent field and laboratory facilities are also available at our research and extension centers at Aberdeen, Parma and Twin Falls, including nationally recognized fruit research and potato research programs.

We welcome questions regarding our Plant Sciences programs. Prospective students may contact us by email at plantsciences@uidaho.edu or by telephone at 208-885-2122.

Majors

- Biotechnology and Plant Genomics (B.S.Pl.Sc.) (p. 124)
- Crop Science and Management (B.S.Pl.Sc.) (p. 126)
- Horticulture and Urban Agriculture (B.S.Pl.Sc.) (p. 128)

Minors

- Biotechnology and Plant Genomics Minor (p. 126)
- Crop Management Minor (p. 126)
- Crop Science Minor (p. 127)
- Horticulture Minor (p. 129)

Plant Sciences Graduate Programs

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Plant, Soil, and Entomological Sciences. See the College of Graduate Studies (p. 292) section for general requirements applicable to each degree.

Master and Doctoral students will choose a major professor with the concurrence of the faculty member involved. This choice is based upon the availability of the faculty member and the compatibility of the student's research interests with those of the professor.

- Plant Science (M.S.) (p. 129)
- Plant Science (Ph.D.) (p. 130)

Biotechnology and Plant Genomics (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
AGED 406 or AGED 407	Exploring International Agriculture Global Agricultural & Life Sciences Systems	3
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 313 or ENGL 317	Business Writing Technical Writing II	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 400	Seminar	1
SOIL 205	The Soil Ecosystem	3
Select one of the following:		4-5
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	
Biotechnology and Plant Genomics Courses		
BIOL 380	Biochemistry I	4
BIOL 444	Genomics	3
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4
GENE 314	General Genetics	3
PLSC 207	Introduction to Biotechnology	3
PLP 415	Plant Pathology	3
PLSC 401	Plant Physiology	3
PLSC 433	Plant Tissue Culture Techniques	3
PLSC 440	Advanced Laboratory Techniques	4
PLSC 446	Plant Breeding	3
PLSC 486	Plant Biochemistry	3
PLSC 488	Genetic Engineering	3
STAT 251	Statistical Methods	3

Select 12 credits of Biotechnology and Genomics of Plants electives from the following:

BIOL 213	Structure and Function Across the Tree of Life
BIOL 382	Biochemistry I Laboratory
BIOL 482	Protein Structure and Function
BIOL 485	Prokaryotic Molecular Biology
BIOL 487	Cellular and Molecular Basis of Disease
ENT 322	General and Applied Entomology
PLP 416	Plant Pathology Lab
PLSC 201	Principles of Horticulture
PLSC 205	General Botany
PLSC 338	Organic and Conventional Weed Management
PLSC 407	Field Crop Production
PLSC 410	Invasive Plant Biology
PLSC 438	Pesticides in the Environment
PLSC 451	Vegetable Crops
PLSC 490	Potato Science
SOIL 206	The Soil Ecosystem Lab
SOIL 446	Soil Fertility

Total Hours **90-92**

Courses to total 120 credits for this degree

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
PLSC 102	The Science of Plants in Agriculture	3
Oral Communication Course		3
MATH 143 OR MATH 160 OR MATH 170		3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		16
Spring Term 1		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 102	Writing and Rhetoric II	3
STAT 251	Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		13
Fall Term 2		
CHEM 112L	General Chemistry II Laboratory	1
CHEM 112	General Chemistry II	4
SOIL 205	The Soil Ecosystem	3
Social and Behavioral Ways of Knowing Course		3
(BIOL 250 AND BIOL 255) OR (EPPN 154 AND EPPN 155)		4
Hours		15
Spring Term 2		
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
GENE 314	General Genetics	3
Humanistic and Artistic Ways of Knowing Course		3
BIOL 213 OR BIOL 382 OR BIOL 482 OR BIOL 485 OR BIOL 487 OR ENT 322 OR PLP 416 OR PLSC 201 OR PLSC 205 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 438 OR PLSC 451 OR PLSC 490 OR SOIL 206 OR SOIL 446		3
Hours		13
Fall Term 3		
BIOL 380	Biochemistry I	4
PLSC 207	Introduction to Biotechnology	3
Social and Behavioral Ways of Knowing Course		3
ENGL 313 OR ENGL 317		3

BIOL 213 OR BIOL 382 OR BIOL 482 OR BIOL 485 OR BIOL 487 OR ENT 322 OR PLP 416 OR PLSC 201 OR PLSC 205 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 438 OR PLSC 451 OR PLSC 490 OR SOIL 206 OR SOIL 446

Hours **16**

Spring Term 3

BIOL 444	Genomics	3
PLSC 433	Plant Tissue Culture Techniques	3
PLSC 486	Plant Biochemistry	3

International Course 3

BIOL 213 OR BIOL 382 OR BIOL 482 OR BIOL 485 OR BIOL 487 OR ENT 322 OR PLP 416 OR PLSC 201 OR PLSC 205 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 438 OR PLSC 451 OR PLSC 490 OR SOIL 206 OR SOIL 446

Hours **15**

Fall Term 4

PLSC 400	Seminar	1
PLSC 488	Genetic Engineering	3
PLP 415	Plant Pathology	3

American Diversity Course 3

PLSC 398 OR PLSC 402 OR PLSC 499 3

BIOL 213 OR BIOL 382 OR BIOL 482 OR BIOL 485 OR BIOL 487 OR ENT 322 OR PLP 416 OR PLSC 201 OR PLSC 205 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 438 OR PLSC 451 OR PLSC 490 OR SOIL 206 OR SOIL 446

Hours **16**

Spring Term 4

PLSC 401	Plant Physiology	3
PLSC 440	Advanced Laboratory Techniques	4
PLSC 446	Plant Breeding	3

Senior Experience Course 3

AGED 406 OR AGED 407 3

Hours **16**

Total Hours **120**

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will be able to recognize and apply scientific principles to various laboratory techniques used for production, management or modification of a wide variety of plant species and their associated systems.
2. Students will be able to present and explain important concepts for plant molecular techniques and will be able to recognize and analyze various laboratory procedures used for analyses of different agronomic and horticultural crops.
3. Students will gain experiential practice in applying their knowledge of biotechnology and plant genomics through internships or laboratory research experiences and participation in student clubs/organizations.
4. Students will be able to communicate effectively, verbally and in writing, problems, analyses, and solutions to biotechnology problems as effected by research techniques and public opinion to a variety of audiences.

Biotechnology and Plant Genomics Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
PLSC 207	Introduction to Biotechnology	3
PLSC 488	Genetic Engineering	3
One of the following (3 credits):		3
GENE 314	General Genetics	
BIOL 310	Genetics	
Two of the following courses: (6-7 credits):		6-7
BIOL 444	Genomics	
BIOL 487	Cellular and Molecular Basis of Disease	
PLSC 440	Advanced Laboratory Techniques	
PLSC 486	Plant Biochemistry	
PLSC 446/546	Plant Breeding	
Total Hours		19-20

Courses to total 19-20 credits for this minor

Crop Management Minor

Code	Title	Hours
PLSC 102	The Science of Plants in Agriculture	3
PLSC 407	Field Crop Production	3
AGEC 278	Farm and Agribusiness Management	3-4
or AGEC 289	Agricultural Markets and Prices	
Select two of the following:		6
PLSC 408	Cereal Science	
PLSC 444	Forage and Grassland Management	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
In addition to the above, select 5-6 credits from the following:		5-6
AGEC 356	Agricultural and Rural Policy	
or AGEC 477	Law, Ethics, and the Environment	
ASM 305	GPS and Precision Agriculture	
ASM 315	Irrigation Systems and Water Management	
PLSC 338	Organic and Conventional Weed Management	
PLSC 408	Cereal Science	
PLSC 438	Pesticides in the Environment	
PLSC 444	Forage and Grassland Management	
PLSC 446	Plant Breeding	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
SOIL 205	The Soil Ecosystem	
& SOIL 206	and The Soil Ecosystem Lab	
SOIL 446	Soil Fertility	
Total Hours		20-22

Courses to total 20 credits for this minor

Crop Science and Management (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
AGED 406	Exploring International Agriculture	3
or AGED 407	Global Agricultural & Life Sciences Systems	
BIOL 115	Cells and the Evolution of Life	4
& 115L	and Cells and the Evolution of Life Laboratory	
PLSC 102	The Science of Plants in Agriculture	3
PLSC 400	Seminar	1
SOIL 205	The Soil Ecosystem	3
Select one of the following:		4-5
BIOL 250	General Microbiology	
& BIOL 255	and General Microbiology Lab	
EPPN 154	Microbiology and the World Around Us	
& EPPN 155	and Microbiology and the World Around Us: Laboratory	
Select one of the following:		4
CHEM 101	Introduction to Chemistry	
& 101L	and Introduction to Chemistry Laboratory	
CHEM 111	General Chemistry I	
& 111L	and General Chemistry I Laboratory	
Select one of the following:		3
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	
Crop Science Courses		
CHEM 275	Carbon Compounds	3
ENT 322	General and Applied Entomology	4
GENE 314	General Genetics	3
PLSC 207	Introduction to Biotechnology	3
PLSC 338	Organic and Conventional Weed Management	4
PLSC 401	Plant Physiology	3
PLSC 407	Field Crop Production	3
PLP 415	Plant Pathology	3
PLP 416	Plant Pathology Lab	1
PLSC 438	Pesticides in the Environment	3
PLSC 446	Plant Breeding	3
PLSC 480	Field Trip	1
SOIL 206	The Soil Ecosystem Lab	1
SOIL 446	Soil Fertility	1-3
STAT 251	Statistical Methods	3
Select 12 credits of Crop Science electives from the following:		12

PLSC 201	Principles of Horticulture	
PLSC 205	General Botany	
PLSC 300	Plant Propagation	
PLSC 398	Internship	
PLSC 408	Cereal Science	
PLSC 410	Invasive Plant Biology	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 440	Advanced Laboratory Techniques	
PLSC 444	Forage and Grassland Management	
PLSC 451	Vegetable Crops	
PLSC 488	Genetic Engineering	
PLSC 490	Potato Science	
Select 6 credits of Professional Support electives from the following:		6
AGEC 278	Farm and Agribusiness Management	
AGEC 289	Agricultural Markets and Prices	
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 356	Agricultural and Rural Policy	
AGEC 447	International Development Economics	
ASM 107	Beginning Welding	
ASM 305	GPS and Precision Agriculture	
ASM 315	Irrigation Systems and Water Management	
STAT 431	Statistical Analysis	
Total Hours		88-92

Courses to total 120 credits for this degree

	Hours	
Fall Term 1		
ENGL 101	Writing and Rhetoric I	3
PLSC 102	The Science of Plants in Agriculture	3
Oral Communication Course		2
MATH 143 OR MATH 160 OR MATH 170		3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		15
Spring Term 1		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Professional Support, Major Elective Course		3
Elective Course		1
Hours		14
Fall Term 2		
CHEM 275	Carbon Compounds	3
PLSC 338	Organic and Conventional Weed Management	4
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Hours		14
Spring Term 2		
GENE 314	General Genetics	3
Social and Behavioral Ways of Knowing Course		3
Crop Science, Major Elective Course		3
(EPPN 154 AND EPPN 155)		4
ENGL 313 OR ENGL 317		3
Hours		16
Fall Term 3		
ENT 322	General and Applied Entomology	4
PLP 415	Plant Pathology	3

PLP 416	Plant Pathology Lab	1
PLSC 207	Introduction to Biotechnology	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		17
Spring Term 3		
PLSC 407	Field Crop Production	3
PLSC 438	Pesticides in the Environment	3
Social and Behavioral Ways of Knowing Course		3
Crop Science, Major Elective Course		3
AGED 406 OR AGED 407		3
Hours		15
Fall Term 4		
PLSC 400	Seminar	1
PLSC 480	Field Trip	1
Crop Science, Major Elective Course		3
Professional Support, Major Elective Course		3
International Course		3
PLSC 398 OR PLSC 402 OR PLSC 499		3
Hours		14
Spring Term 4		
PLSC 401	Plant Physiology	3
PLSC 446	Plant Breeding	3
SOIL 446	Soil Fertility	3
American Diversity Course		3
Crop Science, Major Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will be able to recognize and apply scientific principles and concepts to production or management of agronomic crops and different field crop production systems.
2. Students will be able to present and explain important concepts for field crop production and will be able to recognize and analyze various procedures for producing various agronomic crops.
3. Students will gain experiential practice in applying their knowledge of agronomy and field crop production through internships or laboratory research experiences and participation in student clubs/organizations.
4. Students will be able to communicate effectively, verbally and in writing, problems, analyses, and solutions to agronomic problems to a variety of audiences.

Crop Science Minor

Code	Title	Hours
GENE 314	General Genetics	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 338	Organic and Conventional Weed Management	4
PLSC 407	Field Crop Production	3
PLSC 446	Plant Breeding	3
Select two courses from the following:		6

PLSC 408	Cereal Science	
PLSC 438	Pesticides in the Environment	
PLSC 451	Vegetable Crops	
PLSC 440	Advanced Laboratory Techniques	
PLSC 444	Forage and Grassland Management	
PLSC 488	Genetic Engineering	
PLSC 490	Potato Science	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
SOIL 446	Soil Fertility	
Total Hours		22

Courses to total 22 credits for this minor

Horticulture and Urban Agriculture (B.S.Pl.Sc.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
AGED 406	Exploring International Agriculture	3
or AGED 407	Global Agricultural & Life Sciences Systems	
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
PLSC 102	The Science of Plants in Agriculture	3
PLSC 400	Seminar	1
SOIL 205	The Soil Ecosystem	3
Select one of the following:		4-5
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
PLSC 398	Internship	
PLSC 402	Undergraduate Research in Plant Science	
PLSC 499	Directed Study	

Horticulture and Urban Agriculture Courses

CHEM 275	Carbon Compounds	3
CHEM 276	Carbon Compounds Lab	1
ENT 322	General and Applied Entomology	4

PLP 415	Plant Pathology	3
PLSC 201	Principles of Horticulture	3
PLSC 300	Plant Propagation	3
PLSC 401	Plant Physiology	3
PLSC 438	Pesticides in the Environment	3
SOIL 206	The Soil Ecosystem Lab	1
Select 12 credits of Horticulture electives from the following:		12
LARC 288	Plant Materials & Design 1	
PLSC 340	Nursery Management	
PLSC 433	Plant Tissue Culture Techniques	
PLSC 451	Vegetable Crops	
PLSC 480	Field Trip	
PLSC 490	Potato Science	
SOIL 417	Market Garden Practicum	

Select 15 credits of Professional Support electives from the following: 15

GENE 314	General Genetics	
PLP 416	Plant Pathology Lab	
PLSC 205	General Botany	
PLSC 207	Introduction to Biotechnology	
PLSC 338	Organic and Conventional Weed Management	
PLSC 407	Field Crop Production	
PLSC 410	Invasive Plant Biology	
PLSC 446	Plant Breeding	
PLSC 488	Genetic Engineering	
SOIL 446	Soil Fertility	
STAT 251	Statistical Methods	

Total Hours 82-84

Courses to total 120 credits for this degree

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
PLSC 102	The Science of Plants in Agriculture	3
Oral Communication Course		3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
MATH 143 OR MATH 160 OR MATH 170		3
Hours		16
Spring Term 1	Hours	
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 102	Writing and Rhetoric II	3
PLSC 201	Principles of Horticulture	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		2
Hours		15
Fall Term 2	Hours	
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
LARC 288 OR PLSC 340 OR PLSC 433 OR PLSC 451 OR PLSC 480 OR PLSC 490 OR SOIL 417		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Elective Course		2
Hours		15
Spring Term 2	Hours	
CHEM 275	Carbon Compounds	3

CHEM 276	Carbon Compounds Lab	1
EPPN 154	Microbiology and the World Around Us	3
EPPN 155	Microbiology and the World Around Us: Laboratory	1
Elective Course		3
GENE 314 OR PLP 416 OR PLSC 205 OR PLSC 207 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 446 OR PLSC 488 OR SOIL 446 OR STAT 251		3
Hours		14
Fall Term 3		
ENT 322	General and Applied Entomology	4
ENGL 313 OR ENGL 317		3
GENE 314 OR PLP 416 OR PLSC 205 OR PLSC 207 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 446 OR PLSC 488 OR SOIL 446 OR STAT 251		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		1
Hours		14
Spring Term 3		
PLSC 438	Pesticides in the Environment	3
Humanistic and Artistic Ways of Knowing Course		3
AGED 406 OR AGED 407		3
LARC 288 OR PLSC 340 OR PLSC 433 OR PLSC 451 OR PLSC 480 OR PLSC 490 OR SOIL 417		3
GENE 314 OR PLP 416 OR PLSC 205 OR PLSC 207 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 446 OR PLSC 488 OR SOIL 446 OR STAT 251		3
Hours		15
Fall Term 4		
PLSC 400	Seminar	1
PLP 415	Plant Pathology	3
International Course		3
PLSC 398 OR PLSC 402 OR PLSC 499		3
GENE 314 OR PLP 416 OR PLSC 205 OR PLSC 207 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 446 OR PLSC 488 OR SOIL 446 OR STAT 251		3
LARC 288 OR PLSC 340 OR PLSC 433 OR PLSC 451 OR PLSC 480 OR PLSC 490 OR SOIL 417		3
Hours		16
Spring Term 4		
PLSC 300	Plant Propagation	3
PLSC 401	Plant Physiology	3
American Diversity Course		3
LARC 288 OR PLSC 340 OR PLSC 433 OR PLSC 451 OR PLSC 480 OR PLSC 490 OR SOIL 417		3
GENE 314 OR PLP 416 OR PLSC 205 OR PLSC 207 OR PLSC 338 OR PLSC 407 OR PLSC 410 OR PLSC 446 OR PLSC 488 OR SOIL 446 OR STAT 251		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will be able to recognize and apply scientific principles and concepts to production or management of horticultural crops and different horticultural systems.
2. Students will be able to present and explain important concepts for plant propagation and will be able to recognize and analyze various procedures for propagating various horticultural crops.

3. Students will gain experiential practice in applying their horticulture knowledge through internships or laboratory research experiences and participation in student clubs/organizations.

4. Students will be able to communicate effectively, verbally and in writing, problems, analyses, and solutions to horticultural problems to a variety of audiences.

Horticulture Minor

Code	Title	Hours
PLSC 102	The Science of Plants in Agriculture	3
PLSC 201	Principles of Horticulture	3
Select three courses from the following:		9
PLSC 300	Plant Propagation	
PLSC 340	Nursery Management	
PLSC 433	Plant Tissue Culture Techniques	
Select two courses from the following:		6
LARC 288	Plant Materials & Design 1	
PLSC 451	Vegetable Crops	
PLSC 490	Potato Science	
SOIL 205	The Soil Ecosystem	
Total Hours		21

Courses to total 21 credits for this minor

Plant Science (M.S.)

Master of Science. Major in Plant Science. (Thesis Option)

General M.S. requirements apply. These requirements include a formal program of at least 30 semester hours to be chosen in consultation with the major professor and approved by the student's supervisory committee. Candidates for this degree must complete an independent research project and submit an acceptable thesis as well as pass a final oral examination.

Master of Science. Major in Plant Science. (Non-thesis Option)

General M.S. non-thesis requirements apply.

Please see the Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIdaho-Responsive/Files/cals/departments/plant-sciences/plant-science-graduate-handbook.pdf>) for details and program requirements on earning the Master of Science in Plant Science degree.

1. Students will be able to demonstrate in-depth technical expertise in their area of study within plant sciences and complete hypothesis-based research.
2. Students will be able to recognize and apply plant sciences principles and concepts to plant management or production systems.
3. Students will gain experiential practice in applying their knowledge of plant sciences through thesis research in the laboratory or in field research experiences.

4. Students will be able to communicate effectively, verbally and in writing, problems, analyses and solutions to plant sciences problems to a variety of audiences.

Plant Science (Ph.D.)

Doctor of Philosophy. Major in Plant Science.

University Ph.D. requirements apply. Additional specific requirements are determined by the student's graduate committee.

Please see the Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cals/departments/plant-sciences/plant-science-graduate-handbook.pdf>) for details and program requirements on earning the Doctor of Philosophy in Plant Science degree.

1. Students will be able to advance the field of plant sciences and contribute to solution of plant science problems by designing and conducting hypothesis-based research.
2. Students will demonstrate competence and sophistication in standard plant science research methods and advanced research techniques used in the laboratory or field, depending on the student's research concentration.
3. Students will be able to develop an innovative research project that addresses critical needs and knowledge gaps in plant sciences.
4. Students will be able to demonstrate in-depth knowledge their plant sciences concentration area.
5. Students will be able to communicate effectively, verbally and in writing, problems, analyses and solutions to complex plant science problems to a variety of audiences.

Department of Soil and Water Systems

Jodi Johnson-Maynard, Chair, Moscow, ID 83844-2339; phone 208-885-7012; jmaynard@uidaho.edu

The Department of Soil and Water Systems (SWS) addresses resource issues related to soil, water quality and quantity, and sustainable food, energy, agricultural, and waste systems. The unit combines faculty with expertise in soil science, hydrology, sediment transport, water resources, irrigation engineering, bioenergy, precision agriculture, nutrient cycling and transport, and waste management to study complex ecological processes and problems in wildland and managed ecosystems. SWS faculty fulfill this commitment through focused excellence in research, teaching, and extension. With faculty located at four research centers throughout the state, SWS has statewide responsibility and impact. The department's teaching program includes a Bachelor of Science in Soil and Water Systems (B.S.S.W.S.) with majors in Environmental Soil Science, Water Science and Management, and Agricultural Systems Management. A college-wide major in Sustainable Food Systems is also administered through SWS. Graduate programs (M.S. and Ph.D.) are available in Soil and Land Resources. Graduate degrees in water are offered through an interdisciplinary program in Water Resources. Minors are available in Soil Science and Agricultural Systems Management.

The Agricultural Systems Management major prepares students to apply biological, physical, mechanical, and business knowledge to the

production, service, sales, application, and management of the equipment and processes used in agriculture. The curriculum stresses courses in agricultural systems management and basic and applied sciences. It also includes a strong background in agricultural economics, accounting, and business. It prepares students for a variety of important and rewarding career opportunities across the entire spectrum of the food and fiber sector. Many graduates return to farming, while others pursue careers as farm managers or are employed in agricultural and natural resource-oriented businesses, banking firms, educational institutions, or governmental agencies.

The Environmental Soil Science major prepares students to work in a variety of fields related to natural resource management. The curriculum stresses in-depth understanding of the field through interdisciplinary training in pedology, soil chemistry, soil physics, soil ecology, and fertility. Graduates are employed as soil scientists, conservationists, agronomists, laboratory managers, and consultants. Students gain hands-on experience by working in laboratories and conducting undergraduate research. Students work towards becoming certified soil scientists prior to graduating.

The Water Science and Management major produces graduates that understand the critical importance of using science to better manage water resources. Graduates fill critical roles in the agricultural industry, research facilities, and state and federal agencies. The breadth of the major offered in this curriculum allows students to develop strong expertise in managing water in complex ecosystems including agriculture, forestry, and rangeland. The degree includes additional math and GIS-based mapping requirements to ensure that graduates have the ability to be successful in job roles such as quantitative hydrologist and irrigation, precision agriculture, and watershed management technicians.

The Sustainable Food Systems major takes an interdisciplinary approach to the study of food and farming systems. The degree is designed to provide a science-based understanding of the many facets of food from sustainable production, food chemistry, and food safety to policy and marketing. Students tie everything together in sophomore and senior level courses that explore local, regional, and global food systems. Many laboratory-based courses offer hands-on experience, and students may specialize in specific areas of the food system. Students gain hands-on experience through required practicum courses and internships and can put concepts taught in courses to work while operating the campus certified organic farm.

Degree offerings within SWS are designed to prepare students for a variety of rewarding career opportunities as well as graduate studies. Course work in all SWS majors includes hands-on learning opportunities and is designed around present and future employment opportunities. We offer students the opportunity to work closely with faculty in classroom and field situations. Our faculty members offer additional specialization through directed study, special topics, seminars, and other courses as needed. Internships are available to provide students with practical job experience and to open doors for career opportunities. Students are encouraged to participate in international exchanges offered through the College of Agricultural and Life Sciences.

We offer many opportunities to conduct advanced, in-depth studies with our important scientific collections and cutting-edge facilities. The Maynard A. Fosberg Monolith collection is one of the largest in the world with 232 soil monoliths. We have a state-of-the-art analytical laboratory facility to accommodate faculty, staff, and students. We also offer a greenhouse facility with controlled temperature and light-programmed rooms and growth chambers. The University has 1,145 acres located

close to campus for field crops, orchards and livestock. Excellent field and laboratory facilities are also available at our research and extension centers at Aberdeen, Parma, Kimberly, and Twin Falls.

Majors

- Agricultural Systems Management (B.S.S.W.S.) (p. 131)
- Environmental Soil Science (B.S.S.W.S.) (p. 132)
- Sustainable Food Systems (B.S.Ag.L.S.) (p. 134)
- Water Science and Management (B.S.S.W.S.) (p. 136)

Minors

- Agricultural Systems Management Minor (p. 132)
- Soil Science Minor (p. 134)
- Sustainable Food Systems Minor (p. 136)
- Water Science and Management Minor (p. 137)

Certificates

- Precision Agriculture Undergraduate Academic Certificate (p. 133)

Soil and Water Systems Graduate Programs

- Soil and Land Resources (M.S.) (p. 134)
- Soil and Land Resources (Ph.D.) (p. 134)

Agricultural Systems Management (B.S.S.W.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
Soil and Water Systems Core		
ASM 315	Irrigation Systems and Water Management	3
AGED 406	Exploring International Agriculture	3
or SOC 350	Food, Culture, and Society	
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing II	
MATH 143	College Algebra	3
PLSC 102	The Science of Plants in Agriculture	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 438	Pesticides in the Environment	3
STAT 251	Statistical Methods	3
Agricultural Systems Management Courses		
ACCT 201	Introduction to Financial Accounting	3
AGEC 278	Farm and Agribusiness Management	4
AGEC 289	Agricultural Markets and Prices	3
AGEC 356	Agricultural and Rural Policy	3
ASM 107	Beginning Welding	3
ASM 112	Introduction to Agricultural Systems Management	3
ASM 200	Seminar	1
ASM 202	Agricultural Shop Practices	3
ASM 305	GPS and Precision Agriculture	3

ASM 331	Electric Power Systems for Agriculture	3
ASM 409	Agricultural Tractors, Power Units and Machinery Management	4
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	4
BUS 190	Integrated Business and Value Creation	3
BLAW 265	Legal Environment of Business	3
ECON 202	Principles of Microeconomics	3
Select one of the following:		3
FS 303	Food Processing	
SOIL 446	Soil Fertility	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select one AgEc Elective - Upper Division course		3
Select one Life Science Elective		3
Select 9 credits of Agricultural and Technical Electives from the following courses or subject areas:		9
FCS 346	Personal and Family Finance and Management	
FCS 446	Financial Counseling and Debt Management	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
ACCT (p. 514)		
AGLS (p. 519)		
AGEC (p. 519)		
AGED (p. 522)		
ASM (p. 524)		
AVS (p. 527)		
CLDR (p. 568)		
FS (p. 629)		
PLSC (p. 730)		
REM (p. 740)		
SOIL (p. 748)		
Total Hours		97

Courses to total 120 credits for this degree

Fall Term 1	Hours	
ASM 112	Introduction to Agricultural Systems Management	3
ASM 200	Seminar	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PLSC 102	The Science of Plants in Agriculture	3
Hours		16
Spring Term 1	Hours	
ASM 107	Beginning Welding	3
BUS 190	Integrated Business and Value Creation	3
ENGL 102	Writing and Rhetoric II	3

(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)	4
Humanistic and Artistic Ways of Knowing Course	3
Hours	16
Fall Term 2	
ACCT 201 Introduction to Financial Accounting	3
BIOL 102 Biology and Society	3
BIOL 102L Biology and Society Lab	1
BLAW 265 Legal Environment of Business	3
STAT 251 Statistical Methods	3
Social and Behavioral Ways of Knowing Course	3
Hours	16
Spring Term 2	
ECON 202 Principles of Microeconomics	3
SOIL 205 The Soil Ecosystem	3
SOIL 206 The Soil Ecosystem Lab	1
Agricultural & Technical, Major Elective Course	3
Elective Course	2
Hours	12
Fall Term 3	
AGEC 278 Farm and Agribusiness Management	4
ASM 315 Irrigation Systems and Water Management	3
ASM 331 Electric Power Systems for Agriculture	3
ENGL 313 OR ENGL 317	3
FS 303 OR SOIL 446	3
Hours	16
Spring Term 3	
AGEC 289 Agricultural Markets and Prices	3
ASM 202 Agricultural Shop Practices	3
ASM 409 Agricultural Tractors, Power Units and Machinery Management	4
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)	4
Hours	14
Fall Term 4	
AGEC 356 Agricultural and Rural Policy	3
ASM 305 GPS and Precision Agriculture	3
AGED 406 OR SOC 350	3
Humanistic and Artistic Ways of Knowing Course	3
American Diversity Course	3
Hours	15
Spring Term 4	
SOIL 438 Pesticides in the Environment	3
Life Science, Major Elective Course	3
Agricultural & Technical, Major Elective Course	3
Agricultural & Technical, Major Elective Course	3
UPDV AGECE, Major Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students have the technical skills and knowledge needed to understand, modify, and integrate agricultural equipment systems.
2. Students use their knowledge of business and physical and biological sciences to creatively solve technical agricultural problems.

3. Students have the techniques, skills, and modern ASM tools necessary for professional practice.
4. Students can effectively communicate regarding agricultural technology and the solutions to agricultural management problems.

Agricultural Systems Management Minor

Code	Title	Hours
ASM 112	Introduction to Agricultural Systems Management	3
ASM 305	GPS and Precision Agriculture	3
ASM 315	Irrigation Systems and Water Management	3
ASM 409	Agricultural Tractors, Power Units and Machinery Management	4
Select at least 6 credits from the following skill courses:		6
ASM 107	Beginning Welding	
ASM 202	Agricultural Shop Practices	
ASM 210	Small Engines	

Total Hours **19**

Courses to total 19 credits for this minor

Environmental Soil Science (B.S.S.W.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
Soil and Water Systems Core		
ASM 315	Irrigation Systems and Water Management	3
AGED 406	Exploring International Agriculture	3
or SOC 350	Food, Culture, and Society	
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing II	
GEOG 385	Foundations of GIS	3
MATH 143	College Algebra	3
PLSC 102	The Science of Plants in Agriculture	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 438	Pesticides in the Environment	3
STAT 251	Statistical Methods	3

Environmental Soil Science Courses

BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
GEOL 111	Physical Geology for Science Majors	3
GEOL 101L	Physical Geology Lab	1
or GEOL 111L	Physical Geology for Science Majors Lab	

MATH 160 or MATH 170	Survey of Calculus Calculus I	4
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
SOIL 400	Seminar	1
SOIL 415	Soil and Environmental Physics	3
SOIL 422	Environmental Soil Chemistry	3
SOIL 425	Microbial Ecology	3
SOIL 446	Soil Fertility	1-3
SOIL 454	Pedology	3
EPPN 154	Microbiology and the World Around Us	3
EPPN 155	Microbiology and the World Around Us: Laboratory	1
Total Hours		78-80

Courses to total 120 credits for this degree

		Hours
Fall Term 1		
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PLSC 102 OR FOR 221		3
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3
Hours		15
Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
MATH 160 OR MATH 170		4
Social and Behavioral Ways of Knowing Course		3
Elective Course		2
Hours		16
Fall Term 2		
CHEM 112L	General Chemistry II Laboratory	1
CHEM 112	General Chemistry II	4
GEOG 385	Foundations of GIS	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
GEOL 111	Physical Geology for Science Majors	3
GEOL 101L OR GEOL 111L		1
Hours		16
Spring Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
CHEM 275 OR CHEM 277		3
Hours		15
Fall Term 3		
ASM 315	Irrigation Systems and Water Management	3
SOIL 415	Soil and Environmental Physics	3
EPPN 154	Microbiology and the World Around Us	3
EPPN 155	Microbiology and the World Around Us: Laboratory	1
ENGL 313 OR ENGL 317		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		16

Spring Term 3		
SOIL 422	Environmental Soil Chemistry	3
American Diversity Course		3
Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course (SOIL 456 suggested)		1
Hours		13
Fall Term 4		
SOIL 454	Pedology	3
STAT 251	Statistical Methods	3
AGED 406 OR SOC 350		3
Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		
SOIL 400	Seminar	1
SOIL 425	Microbial Ecology	3
SOIL 446	Soil Fertility	3
International Course		3
SOIL 438	Pesticides in the Environment	3
Elective Course (SOIL 499 suggested)		1
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students demonstrate knowledge of the physical, biological and chemical principles that determine function in soil and water systems.
2. Students can effectively communicate science-based data to a variety of audiences.
3. Students gain experiential experience in applying their knowledge through internships and participating in student organizations.

Precision Agriculture Undergraduate Academic Certificate

Code	Title	Hours
ASM 240	Computer Applications in Biophysical Systems	3
ASM 305	GPS and Precision Agriculture	3
ASM 409	Agricultural Tractors, Power Units and Machinery Management	3-4
or ASM 405	Precision Agriculture Science and Technology	
ASM 498/499	Internship	1-3
REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)	3
Total Hours		13-16

Courses to total 13 credits for this certificate.

1. Students familiar with methods of precision agriculture as applied to cropping systems, nutrient management, and water management/irrigation.

2. Students able to assess new technologies and objectively evaluate feasibility and benefits of precision agriculture technologies.
3. Students familiar with precision application implements, remote sensing, drones, and farm-data management software.
4. Students understand the social, economic, regulatory, and environmental context of agriculture, and identify the role of precision agriculture in addressing related challenges.

Soil and Land Resources (M.S.) Master of Science. Major in Soil and Land Resources. (Thesis Option)

General M.S. requirements apply. These requirements include a formal program of at least 30 semester hours to be chosen in consultation with the major professor and approved by the student's supervisory committee. Candidates for this degree must complete an independent research project and submit an acceptable thesis as well as pass a final oral examination.

Master of Science. Major in Soil and Land Resources. (Non-thesis Option)

General M.S. non-thesis requirements apply.

Please see the Soil and Water Systems Graduate Student Handbook for details and program requirements on earning this degree.

1. Students will be able to analyze complex environmental problems and synthesize conclusions on environmental or agricultural issues by objectively evaluating the validity and scientific value of data obtained from multiple sources.
2. Students will be able to communicate scientific information in written or oral form in an effective manner.
3. Students will have an understanding of the standard concepts and scientific methods used in soil science research and understand how to apply these concepts and tools/methods to generate meaningful data.
4. Students will have effectively collaborated with peers, staff, and faculty from different backgrounds and cultures.

Soil and Land Resources (Ph.D.) Doctor of Philosophy. Major in Soil and Land Resources.

University Ph.D. requirements apply. Additional specific requirements are determined by the student's graduate committee.

Please see the Soil and Water Systems Graduate Student Handbook for details and program requirements on earning this degree.

1. Students can analyze complex environmental problems and synthesize conclusions on controversial environmental or agricultural issues by objectively evaluating the validity and scientific value of data obtained from multiple sources.
2. Students can develop an innovative research project that addresses critical needs and knowledge gaps in the area of soil and water resources.
3. Students demonstrate the ability to effectively work with peers, staff, and faculty from different backgrounds and cultures.

4. Students can communicate scientific information in written or oral form to teach or train others in the individual's field of expertise, and provide soil science expertise to regional planners, government entities, private citizens, or commercial firms for the purpose of decision making and to the general population in an effective manner.

Soil Science Minor

Code	Title	Hours
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 415	Soil and Environmental Physics	3
SOIL 422	Environmental Soil Chemistry	3
SOIL 438	Pesticides in the Environment	3
SOIL 446	Soil Fertility	1-3
SOIL 454	Pedology	3
Select courses from the following to total at least 20 credits for this minor:		
SOIL 417	Market Garden Practicum	
SOIL 425	Microbial Ecology	
Total Hours		17-19

Courses to total 20 credits for this minor

Sustainable Food Systems (B.S.Ag.L.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
Agricultural and Life Sciences Core (p. 100)		13
Sustainable Food Systems Courses		
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
POLS 364	Politics of the Environment	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 210	Introduction to Food Systems	3
SOIL 398	Internship	1-6
SOIL 417	Market Garden Practicum	1-6
SOIL 427	Sustainable Food Systems	3
STAT 251	Statistical Methods	3
Select one of the following sequences:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		2-3
COMM 101	Fundamentals of Oral Communication	
COMM 150	Online Oral Communication	
Select one of the following:		3
ENGL 313	Business Writing	

ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select at least 6 credits from the following:		6
IS 410	NGOs in the International System	
NRS 235	Society and Natural Resources	
POLS 209	Introduction to American Politics and Policy	
SOC 101	Introduction to Sociology	
Select at least one of the following:		3-4
AVS 109	The Science of Animals that Serve Humanity	
AVS 110 & 110L	Science of Animal Husbandry and Science of Animal Husbandry Lab	
PLSC 102	The Science of Plants in Agriculture	
Select from the following major electives to total required credit hours:		
ANTH 314	Tribal Sovereignty and Federal Policy	
ASM 107	Beginning Welding	
ASM 202	Agricultural Shop Practices	
ASM 315	Irrigation Systems and Water Management	
AVS 363	Animal Products for Human Consumption	
BIOL 300	Survey of Biochemistry	
CHEM 275	Carbon Compounds	
	or CHEM 277Organic Chemistry I	
CLDR 360	Leadership and Community Dynamics	
ENT 322	General and Applied Entomology	
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	
FN 205	Concepts in Human Nutrition	
FOR 221	Principles of Ecology	
FS 110	Introduction to Food Science	
FOR 375	Fundamentals of Geomatics	
FS 201	Science on Your Plate: Food Safety, Risks and Technology	
FS 220	Food Safety and Quality	
FS 436	Principles of Sustainability	
GEOG 165	Human Geography	
GEOG 313	Global Climate Change	
GEOG 385	Foundations of GIS	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
MKTG 321	Marketing	
ORGS 305	Nonprofit Organizations	
PLSC 338	Organic and Conventional Weed Management	
PLSC 451	Vegetable Crops	
SOIL 422	Environmental Soil Chemistry	
SOIL 425	Microbial Ecology	
SOIL 438	Pesticides in the Environment	
SOIL 446	Soil Fertility	
SOIL 454	Pedology	

SOC 350	Food, Culture, and Society
SOC 465	Environmental Justice
Total Hours	59-72

Courses to total 120 credits for this degree

	Hours
Fall Term 1	
ENGL 101	Writing and Rhetoric I
AVS 109 OR (AVS 110 AND AVS 110L) OR PLSC 102	
MATH 143 OR MATH 160 OR MATH 170	
Humanistic and Artistic Ways of Knowing Course	
Major Elective Course	
Hours	15
Spring Term 1	
COMM 101	Fundamentals of Oral Communication
ENGL 102	Writing and Rhetoric II
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)	
Social and Behavioral Ways of Knowing Course	
Major Elective Course	
Hours	15
Fall Term 2	
AGEC 278	Farm and Agribusiness Management
BIOL 115	Cells and the Evolution of Life
BIOL 115L	Cells and the Evolution of Life Laboratory
SOIL 205	The Soil Ecosystem
SOIL 206	The Soil Ecosystem Lab
Major Elective Course	
Hours	15
Spring Term 2	
ECON 202	Principles of Microeconomics
STAT 251	Statistical Methods
IS 410 OR NRS 235 OR POLS 209 OR SOC 101	
Major Elective Course	
Major Elective Course	
Hours	15
Fall Term 3	
SOIL 210	Introduction to Food Systems
ENGL 316 OR ENGL 317 OR ENGL 318	
IS 410 OR NRS 235 OR POLS 209 OR SOC 101	
Major Elective Course	
Major Elective Course	
Hours	15
Spring Term 3	
AGED 451	Communicating in Agriculture
MVSC 486	Healthy Active Lifestyle Assessment and Intervention
AGED 406 OR AGED 407	
Humanistic and Artistic Ways of Knowing Course	
American Diversity Course	
Hours	15
Fall Term 4	
SOIL 398	Internship
Major Elective Course	
Major Elective Course	
Major Elective Course	
Major Elective Course	
Hours	15
Spring Term 4	
POLS 364	Politics of the Environment
SOIL 417	Market Garden Practicum
SOIL 427	Sustainable Food Systems
Major Elective Course	

Major Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students can apply scientific principles and systems thinking to the development and management of sustainable agricultural and food systems.
2. Students demonstrate the ability to assess the sustainability of agricultural and food systems using a systems-based approach applying economic, social, and natural-resource related criteria.
3. Students understand the roles and responsibilities of food systems professionals in society.
4. Students demonstrate the ability to effectively communicate science-based data to a variety of audiences.

Sustainable Food Systems Minor

Code	Title	Hours
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 210	Introduction to Food Systems	3
SOIL 417	Market Garden Practicum	4
SOIL 427	Sustainable Food Systems	3
AGED 451	Communicating in Agriculture	3
Choose one of the following:		3
SOC 350	Food, Culture, and Society	
SOIL 446	Soil Fertility	
FS 436	Principles of Sustainability	
PLSC 451	Vegetable Crops	
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	
Total Hours		20

Courses to total 20 credits for this minor

Water Science and Management (B.S.S.W.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
AGED 406	Exploring International Agriculture	3
or SOC 350	Food, Culture, and Society	
or ANTH 350	Food, Culture, and Society	
ASM 305	GPS and Precision Agriculture	3
ASM 315	Irrigation Systems and Water Management	3
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4

CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
ENGL 101	Writing and Rhetoric I	3
ENGL 102	Writing and Rhetoric II	3
ENGL 313 or ENGL 317	Business Writing or Technical Writing II	3
FIRE 326	Fire Ecology	3
GEOG 385 or FOR 375	Foundations of GIS or Fundamentals of Geomatics	3
GEOG 424 or GEOG 475 or FOR 472	Hydrologic Applications of GIS and Remote Sensing or Intermediate GIS or Remote Sensing of the Environment	3
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	4
GEOL 309	Ground Water Hydrology	3
GEOL 410	Groundwater Field Methods	3
HYDR 409 or HYDR 412	Quantitative Hydrogeology or Environmental Hydrogeology	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 111 & 111L	General Physics I and General Physics I Lab	4
PHYS 112 & 112L	General Physics II and General Physics II Lab	4
PLSC 102 or FOR 221	The Science of Plants in Agriculture or Principles of Ecology	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 415	Soil and Environmental Physics	3
SOIL 422	Environmental Soil Chemistry	3
SOIL 438	Pesticides in the Environment	3
SOIL 446	Soil Fertility	2
SOIL 450 or ENVS 450	Environmental Hydrology or Environmental Hydrology	3
SOIL 452	Environmental Water Quality	3
STAT 251	Statistical Methods	3
Total Hours		100

Courses to total 120 credits for this degree

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
GEOL 111	Physical Geology for Science Majors	3
GEOL 111L	Physical Geology for Science Majors Lab	1
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
COMM 101	Fundamentals of Oral Communication	3
Social and Behavioral Ways of Knowing Course		3
Hours	17	
Spring Term 1		
CHEM 111	General Chemistry I	3

CHEM 111L	General Chemistry I Laboratory	1
MATH 170	Calculus I	4
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		14
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PLSC 102 OR FOR 221		3
Hours		16
Spring Term 2		
MATH 175	Calculus II	4
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Hours		15
Fall Term 3		
ASM 315	Irrigation Systems and Water Management	3
GEOL 309	Ground Water Hydrology	3
SOIL 415	Soil and Environmental Physics	3
ENGL 313 OR ENGL 317		3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		
SOIL 422	Environmental Soil Chemistry	3
SOIL 438	Pesticides in the Environment	3
GEOG 385 OR FOR 375		3
AGED 406 OR SOC 350 OR ANTH 350		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Fall Term 4		
ASM 305	GPS and Precision Agriculture	3
GEOL 410	Groundwater Field Methods	3
SOIL 450 OR ENV5 450		3
SOIL 452		3
American Diversity or International Course		3
Hours		15
Spring Term 4		
SOIL 446	Soil Fertility	3
HYDR 409 OR HYDR 412		3
FIRE 326 OR FOR 462 OR FISH 415		3
FOR 472 OR GEOG 424 OR GEOG 475		3
Elective Course		1
Hours		13
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students gain experiential experience in applying their knowledge through internships and participating in student organizations.

Water Science and Management Minor

Code	Title	Hours
Choose one of the following:		
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	4
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
ASM 315 or SOIL 448	Irrigation Systems and Water Management Drinking Water and Human Health	3
SOIL/ENVS 450 or SOIL 415	Environmental Hydrology Soil and Environmental Physics	3
SOIL 452 or SOIL 444	Environmental Water Quality Water Quality in the Pacific Northwest	3
Select 6 credits from the following:		
GEOL 309	Ground Water Hydrology	6
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
FISH 415	Limnology	
FOR 462	Watershed Science and Management	
Total Hours		19

Courses to total 19 credits for this minor

Margaret Ritchie School of Family and Consumer Sciences

Michelle (Shelley) McGuire, School Director (105 Mary Hall Niccolls Bldg. 83844-3183; phone 208-885-6546; famcon@uidaho.edu; <https://www.uidaho.edu/cals/family-and-consumer-sciences> (<https://www.uidaho.edu/cals/family-and-consumer-sciences/>))

The collective family and consumer sciences (FSC) disciplines (formerly referred to as home economics) focus on the relationships, resources, and services contributing to holistic individual, family, and community health and well-being. The disciplines analyze the needs of individuals, families, and communities using social, psychological, physical, biological, economic, and aesthetic theories and concepts.

Seven unique undergraduate majors are in the Margaret Ritchie School of Family and Consumer Sciences, each leading to a bachelor of science (B.S.) and designed to meet professional and individual goals of our students. These majors are as follows:

1. Apparel, Textiles, and Design
2. Child Development
3. Early Childhood Education
4. Human Development and Family Studies
5. Family and Consumer Sciences
6. Food and Nutrition
7. Nutritional Sciences

The Margaret Ritchie School of Family and Consumer Sciences has an outstanding scholarship program for entering first-year students,

continuing undergraduate majors, and graduate students. Most scholarships are awarded on the basis of academic excellence regardless of financial need. More than half a million dollars in scholarship funds are dispersed on an annual basis. In addition, myriad internships and study abroad opportunities are available to qualified students.

Apparel, Textiles, and Design

The Apparel, Textiles, and Design major offers both apparel design and fashion merchandising emphases. Combining courses from art or business with the clothing, textile, and design courses offered in the school prepares students for careers in retail and wholesale sectors of the apparel and textile industries. Students in this major garner substantial hands-on learning in the school's well-equipped clothing construction and technology studios. In addition, they have access to the Leila Old Historic Costume Collection which houses over 10,000 historical items. Designers, product development specialists, retail buyers and managers, and merchandise managers are some of the career titles held by UI graduates.

Child Development

In this program, you'll develop the specialized skills to help families create the environment every child needs for healthy development. Examine typical developmental stages of children and families, study current research and take courses in human development and behavior, parent-child relationships, nutrition and other related topics to prepare for your role in this specialization. Students in this major work closely with teachers and staff in the school's in-house laboratory school (Child Development Laboratory) to garner hands-on experience working with young children. This major prepares students to work with children and families, including in preschool settings.

Early Childhood Education

Quality care and education for young children is critically important, and demand for teachers is great. In this program, you will study teaching methods, explore child development and family relations, and learn about special education strategies in real-world settings. Students in this major work closely with teachers and staff in the school's in-house laboratory school (Child Development Laboratory) to garner hands-on experience working with young children. Upon completion, you are eligible for the Idaho blended early childhood education/early childhood special education (birth – grade 3) teaching certification.

Human Development and Family Studies

In this program, you will explore family and relationship dynamics across the lifespan and learn how to help teens, adults, couples, families, and older adults lead better, more fulfilling lives. In this program, students will explore patterns of individual development and family functioning, including how contextual factors influence social-emotional, physical and cognitive development and behavior. Career paths for these majors include individual, family, and school counseling as well as social work and a variety of other people-facing occupations.

Family and Consumer Sciences

In this program, you'll develop skills to assist families and consumers with decisions to improve their lives. You'll receive a broad education that covers diverse topics including consumer and family finance, personal development, nutrition, child development, and family life. This major can also be paired with the Career and Technical Education major to prepare students to become FCS teachers in middle and high schools. Graduates

are also uniquely suited to work in the Extension realm, providing FCS education to the public.

Food and Nutrition

In this program, you will receive foundational knowledge in anatomy, physiology, and biochemistry to understand how the body utilizes food. Students will explore how to prepare food and develop recipes to be appealing and nutrient dense; plan menus and prepare meals to meet the needs of individuals and groups; learn about macro and micronutrients, nutritional biochemistry and how nutritional needs of humans change throughout the lifespan; and assess nutritional status and provide nutrition education and counseling to prevent chronic disease and optimize health. The Food and Nutrition degree prepares students for careers as food service managers, medical and health services managers, health educators, community health workers, or dietetic technicians. It prepares students to pursue graduate work to become a registered dietitian nutritionist (RDN). Students are eligible to apply for the University of Idaho's M.S. in dietetics, a unique 3 + 2 program which results in earning both a B.S. and M.S. in just 5 years.

Nutritional Sciences

Learn about how your body utilizes the food you eat to maintain health and how unbalanced eating patterns can lead to poor health and disease. In your courses, you'll not only learn about food and nutrition, but also fundamental aspects of nutritional physiology, biochemistry, microbiology, the psychology of eating and food choices, and how to support physical activity with healthy eating. With a degree in nutritional sciences, you will be prepared for advanced healthcare education, graduate school, and research. In addition to being a top-notch prehealth program, this flexible degree is also an excellent launching point for other careers in health and wellness.

Graduate Studies

The Margaret Ritchie School of Family and Consumer Sciences offers graduate course work and research opportunities to address concerns facing individuals, families, and communities at all levels of society. An integrated approach prepares students for the complexities of our global society through the analysis and application of relevant theories, practices, teaching, research, and outreach. One of the greatest strengths of teaching, research, and outreach found in FCS is its interdisciplinary nature. As each sub-discipline within the diverse FCS field gains strength in scholarship, each also finds richness in collaborations. Theoretical frameworks guiding much of our work center on systems theory and human ecological models and are, as appropriate, also grounded in basic science. We strive to answer our research questions utilizing expertise from the sub-disciplines, creating deeper thinking within the field of FCS and across the university. This is what makes FCS a powerhouse in teaching, research, and outreach.

Graduate students apply communication, analytical, evaluation, and synthesis skills to the study of families and consumers through classroom, practice, teaching, and research experiences. The school's world-class Child Development Laboratory provides a unique resource for both teaching and research activities for all FCS sub-disciplines. Internships in community agencies and business, practical experience in teaching and supervision, and graduate teaching and research assistantships also provide valuable graduate student training. Graduate student research is closely aligned with faculty interests that currently include early childhood education, young children's cognitive and social-emotional development, at-risk youth, maternal and infant health and nutrition, human milk and breastfeeding, nutrition and cognition, food

safety, family and consumer sciences education, the international apparel industry, design scholarship, and cultural and historical aspects of dress. The program can also prepare students to be teachers in public schools and community colleges; child or human development specialists in public and private organizations such as nonprofit and social services agencies, hospitals, childcare centers, and the extension system; and for the future pursuit of the doctoral degrees in family and consumer sciences, social work, education, human development, nutrition, and related fields.

Majors

- Apparel, Textiles, and Design (B.S.) (p. 139)
- Child Development (B.S.) (p. 141)
- Early Childhood Education (B.S.) (p. 142)
- Family and Consumer Sciences (B.S.) (p. 144)
- Food and Nutrition (B.S.) (p. 146)
- Human Development and Family Studies (B.S.) (p. 147)
- Nutritional Sciences (B.S.) (p. 149)

Minors

- Apparel, Textiles, and Design Minor (p. 141)
- Human and Community Engagement Minor (p. 147) (offered collaboratively with the department of Agricultural Education, Leadership and Communications (p. 104))
- Nutrition Minor (p. 149)

Family and Consumer Sciences Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Margaret Ritchie School of Family and Consumer Sciences. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Dietetics (M.S.) (p. 142)
- Family and Consumer Sciences (M.S.) (p. 146)
- Nutritional Sciences (M.S.) (p. 151)
- Nutritional Sciences (Ph.D.) (p. 151)

Apparel, Textiles and Design (B.S.)

This major considers apparel, textiles, and design as basic human needs, consumer products, historical and cultural artifacts, and communication tools. Students who wish to graduate in Apparel, Textiles and Design (ATD) must earn a grade of 'C' or higher in all required ATD coursework, including Area of Focus courses.

Students are required to complete an advisor-approved focus area of 18 credits. Students select their focus area at the end of their sophomore year. Standard program focus areas are Design, Marketing/Merchandising, and Product Development. Students may choose a related focus area by submitting a proposal to ATD Faculty clearly showing the relationship between Apparel, Textiles and Design and their proposed area of focus relative to the industry, their career goals, and any emerging opportunities. Other focus areas may include Costume Design, Advertising, Business, or International Studies. Upon approval, a double major or minor could also be used instead as long as the other content area is relative to Apparel, Textiles and Design.

Apparel, Textiles and Design Program Outcomes

Foundations

- Understand the global nature and scope of the industry and related sectors, including but not limited to design, production, buying and merchandising, and distribution.
- Focus on fibers and textile materials and specification relative to serviceability, quality, performance, and cost.
- Understand and apply knowledge about key concepts such as target market, product development, the consumer, and the roles and functions of various contexts in which products are developed and consumed.

Product Development

- Identify and interpret needs and wants of consumers and how industry processes are applied to plan, develop, produce, communicate, and sell profitable product lines.
- Relate the elements and principles of design to product development, use, and evaluation and use the design process to create products that meet marketplace needs.
- Demonstrate critical and creative thinking skills and creative problem-solving skills, including the ability to critically evaluate and compare diverse perspectives.
- Communicate ideas in written, verbal, and visual forms using appropriate technology.
- Evaluate product quality, serviceability, and regulatory standards.

Understanding the Consumer

- Understand, communicate, and apply knowledge and research regarding appearance and human behavior and about the complex nature of consumer behavior as it relates to aesthetic preferences, economic and purchasing decisions, and social, historical, and cultural factors.
- Understand the concept of dress (as all of the supplements and modifications to the body) and its role as it reflects and shapes intra- and inter-cultural and social interactions.
- Apply knowledge about the interrelationships among historic and socio-cultural factors of dress and their impact on human behavior, including the effects of life stages, change across time, and culture.

Career Development and Professional Skills

- Identify and evaluate issues of social responsibility, professional behavior, sustainability and ethics related to the impact of individual, organizational, and corporate decision-making.
- Demonstrate the necessary skills for industry careers, including creativity, teamwork, attitude, ethics, goal setting, and career development.
- Function as team members and leaders within professional and culturally diverse environments.
- Apply concepts and integrate knowledge through practical learning experiences in meaningful workplace settings and various industry contexts.

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
ART 100	Introduction to Art: Why Art Matters	3
COMM 101	Fundamentals of Oral Communication	3

ENGL 313	Business Writing	3
or ENGL 317	Technical Writing II	
ENVS 101	Introduction to Environmental Science	3
ATD 119	Introduction to Fashion and the Apparel Industry	3
HDFS 105	Individual and Family Development	3
ATD 123	Textiles	3
ATD 124	Introduction to Apparel Construction	2
ATD 239	Digital Illustration for the Apparel Industry	3
ATD 224	Apparel Construction and Assembly Processes	3
ATD 223	Fashion Business and Product Development	3
ATD 324	Patternmaking	4
ATD 349	History of Western Dress	3
ATD 449	Dress and Culture	3
FCS 448	Consumer Economic Issues	3
ATD 413	Portfolio Development	3
INTR 201	Major/Career Exploration and Decision Making	1
MKTG 321	Marketing	3
PSYC 101	Introduction to Psychology	3
or SOC 101	Introduction to Sociology	
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one of the following:		3
PSYC 320	Introduction to Social Psychology	
SOC 340	Environmental Sociology and Globalization	
Select one of the following Senior Experiences:		3-4
ATD 424	Senior Experience: Apparel Design	
ATD 460	Apparel Promotion and Merchandising	
Complete one of the following Professional Development experiences:		
Undergraduate Research Project		
Faculty-led Study Tour		
Study Abroad		
Internship		
Select 3 credits of Anthropology electives		3
Area of Focus Credits		18
Total Hours		85-87

Courses to total 120 credits for this degree

Fall Term 1		Hours
ART 100	Introduction to Art: Why Art Matters	3
ENGL 101	Writing and Rhetoric I	3
ATD 119	Introduction to Fashion and the Apparel Industry	3
ATD 124	Introduction to Apparel Construction	2
Mathematical Ways of Knowing Course		3
Hours		14
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
ATD 123	Textiles	3
ATD 224	Apparel Construction and Assembly Processes	3
COMM 101	Fundamentals of Oral Communication	3
PSYC 101 OR SOC 101		3
Hours		15

Fall Term 2		
HDFS 105	Individual and Family Development	3
ATD 239	Digital Illustration for the Apparel Industry	3
Scientific Ways of Knowing Course		4
ECON 201 OR ECON 202 OR ECON 272		3
Hours		13
Spring Term 2		
Area of Focus, Major Elective Course		3
Area of Focus, Major Elective Course		3
Anthropology, Major Elective Course		3
Scientific Ways of Knowing Course		4
Elective Course		3
Hours		16
Fall Term 3		
ATD 324	Patternmaking	4
ATD 349	History of Western Dress	3
MKTG 321	Marketing	3
Elective Course		3
PSYC 320 OR SOC 340		3
Hours		16
Spring Term 3		
ATD 449	Dress and Culture	3
ATD 223	Fashion Business and Product Development	3
Area of Focus, Major Elective Course		3
Area of Focus, Major Elective Course		3
ENGL 313 OR ENGL 317		3
Hours		15
Fall Term 4		
FCS 448	Consumer Economic Issues	3
ATD 413	Portfolio Development	3
American Diversity Course		3
Area of Focus, Major Elective Course		3
Area of Focus, Major Elective Course		3
Hours		15
Spring Term 4		
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Elective Course		3
Elective Course		2
ATD 424 OR ATD 460		4
Hours		15
Total Hours		119

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Students will:

1. Understand the global nature and scope of industry.
2. Develop understanding of fibers and textile materials and specifications relative to serviceability, quality, performance, and cost.
3. Understand and apply knowledge about key concepts such as target market, product development, the consumer, and the roles and functions of various contexts in which products are developed and consumed.
4. Demonstrate awareness of communication skills and tools.

5. Identify and understand the target consumer.
6. Relate elements and principles of design to product development.
7. Demonstrate critical thinking, creative thinking, and creative problem solving.
8. Communicate in written, verbal, and visual forms.
9. Evaluate product quality, serviceability, and regulatory standards.
10. Understand appearance, human behavior, aesthetic preferences, economic and purchasing decisions, and social, historical, and cultural factors.
11. Understand concept of dress related to intra- and inter-cultural and social interactions.
12. Apply knowledge of dress and culture across life stages, time, and culture.
13. Identify and evaluate social responsibility, professional behavior, and ethics.
14. Demonstrate necessary skills for careers, including communication in written, verbal, and visual forms.
15. Function as a team member or leader.
16. Apply concepts and knowledge in workplace and industry contexts.

Apparel, Textiles and Design Minor

Code	Title	Hours
ATD 119	Introduction to Fashion and the Apparel Industry	3
ATD 123	Textiles	3
ATD 223	Fashion Business and Product Development	3
ATD 349	History of Western Dress	3
ATD 449	Dress and Culture	3
3-5 Credits in the following courses:		3-5
MKTG 321	Marketing	
ATD 124	Introduction to Apparel Construction	
FCS 448	Consumer Economic Issues	
ATD 460	Apparel Promotion and Merchandising	
Total Hours		18-20

Courses to total 18-20 credits for this minor

Child Development (B.S.)

Required coursework includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
COMM 335	Intercultural Communication	3
or SOC 201	Introduction to Inequity and Justice	
ECDE 210	Introduction to Early Childhood Education	3
ECDE 234	Infancy and Early Childhood	3
ECDE 235	Principles and Methods of Child Observation	3
ECDE 254	Middle Childhood Development	3
ECDE 330	Positive Behavior Intervention and Support	3
ECDE 333	Developmental Curriculum for Young Children	4
ECDE 340	Parent-Child Relationships in Family and Community	3
ECDE 435	Feeding Young Children in Group Settings	1

ECDE 436	Theories of Child and Family Development	3
ECDE 481	Early Childhood SPED Curriculum	3
ECDE 497	INTERN: Preschool	9-16
EDSP 300	Educating for Exceptionalities	3
FCS 251	Survey of FCS Professions	1
FCS 346	Personal and Family Finance and Management	4
FN 205	Concepts in Human Nutrition	3
HDFS 105	Individual and Family Development	3
HDFS 240	Intimate Relationships	3
HDFS 334	Adolescence and Emerging Adulthood	3
HDFS 440	Contemporary Family Relationships	3
HDFS 445	Issues in Work and Family Life	3
PSYC 101	Introduction to Psychology	3
STAT 251	Statistical Methods	3
or PSYC 215	Quantitative Methods in Psychology	
SOC 101	Introduction to Sociology	3
Choose one of the following:		3-4
ORGS 444	Methods and Analysis in Organizational Science	
PSYC 218	Introduction to Research in the Behavioral Sciences	
SOC 416	Qualitative Social Science Methods	
SOC 417	Social Data Analysis	

Total Hours 82-90

Courses to total 120 credits for this degree

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
HDFS 105	Individual and Family Development	3
Scientific Ways of Knowing Course		4
Mathematical Ways of Knowing Course		3
ECDE 210	Introduction to Early Childhood Education	3
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
ECDE 234	Infancy and Early Childhood	3
SOC 101	Introduction to Sociology	3
Scientific Ways of Knowing Course		4
COMM 101	Fundamentals of Oral Communication	3
Hours		16
Fall Term 2		Hours
FN 205	Concepts in Human Nutrition	3
ECDE 235	Principles and Methods of Child Observation	3
FCS 251	Survey of FCS Professions	1
PSYC 101	Introduction to Psychology	3
ECDE 254	Middle Childhood Development	3
Hours		13
Spring Term 2		Hours
HDFS 240	Intimate Relationships	3
ECDE 333	Developmental Curriculum for Young Children	4
STAT 251	Statistical Methods	3
or PSYC 215	or Quantitative Methods in Psychology	
Humanistic and Artistic Ways of Knowing Course		3
		3
Hours		16
Fall Term 3		Hours
ECDE 340	Parent-Child Relationships in Family and Community	3
ECDE 330	Positive Behavior Intervention and Support	3

ORGS 444 OR PSYC 218 OR SOC 416 OR SOC 417	3	
COMM 335 OR SOC 201	3	
HDFS 334	Adolescence and Emerging Adulthood	3
Hours		15
Spring Term 3		
EDSP 300	Educating for Exceptionalities	3
FCS 346	Personal and Family Finance and Management	4
International Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		2
Hours		15
Fall Term 4		
ECDE 435	Feeding Young Children in Group Settings	1
ECDE 497	INTERN: Preschool	9-12
Elective Course		2
HDFS 445	Issues in Work and Family Life	3
Hours		15-18
Spring Term 4		
HDFS 440	Contemporary Family Relationships	3
Elective Course		3
ECDE 481	Early Childhood SPED Curriculum	3
Elective Course		3
ECDE 436	Theories of Child and Family Development	3
Hours		15
Total Hours		121-124

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

- 1. Learn and Integrate:** Students will demonstrate skills and strategies for planning, implementing, and evaluating environments for supporting child and family development.
- 2. Think and Create:** Students will apply theories and evidence-based strategies to programming that supports growth and development of children and their families.
- 3. Communication:** Students will demonstrate skills (oral and computer-generated written presentation skills) to communicate and report information to parent and colleagues.
- 4. Clarify Purpose and Perspective:** Students will demonstrate practical strategies for advocating for children and families.
- 5. Practice Citizenship:** Students will demonstrate ongoing professional learning and reflection to build knowledge and understanding of concepts related to child development and family relationships.

Dietetics (M.S.)

Students admitted to the M.S. Dietetics program are required to complete the following 400-level courses. These courses can be completed during the fourth year of the B.S. Food and Nutrition major for students in the 3+2 or as part of the first year of the M.S. Dietetics.

Undergraduate Course Requirements (27 credits)

Code	Title	Hours
FN 450	Global Nutrition	3
FN 464	Nutrition Counseling	3
FN 465	Clinical Dietetics	3
FN 466	Nutrition Assessment Laboratory	1
FN 470	Quantity Food Production and Equipment	3
FN 471	Quantity Food Production and Equipment Lab	2
FN 491	Community Nutrition	3
FN 492	Nutrition Education	3
STAT 431	Statistical Analysis	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
Total Hours		27

This degree requires 30 credits of 500-level courses and at least 1,000 hours of supervised experiential learning in nutrition and dietetics settings culminating in successful completion of a comprehensive final exam. It is accredited through the Accreditation Council for Education in Nutrition and Dietetics (ACEND).

M.S. in Dietetics Course Requirements (30 credits)

Code	Title	Hours
FCS 501	Seminar	2
FN 509	Nutrition and Dietetics Professional Skills	1
FN 565	Nutrition Therapy and Disease	3
FN 566	Applied Clinical Dietetics	7
FN 570	Management and Leadership in Dietetics	3
FN 571	Applied Food and Nutrition Management	7
FN 591	Applied Community Nutrition	5
FCS 599	Non-thesis Master's Research	2
Total Hours		30

Students will:

- Apply foundational sciences to food and nutrition knowledge to meet the needs of individuals, groups and organizations.
- Apply and integrate client/ patient-centered principles and competent nutrition and dietetics practice to ensure positive outcomes.
- Apply food systems principles and management skills to ensure safe and efficient delivery of food and water.
- Apply community and populations nutrition health theories when providing support to community or population nutrition programs.
- Demonstrate leadership, business and management principles to guide practice and achieve operational goals.
- Integrate evidence-informed practice, research principles and critical thinking into practice.
- Demonstrate professional behaviors and effective communication in all nutrition and dietetics interactions.

Early Childhood Education (B.S.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 320	Teaching Reading and Literacy	3
EDCI 321	Literature for Children	3
EDCI 322	Teaching Writing/Language Arts	3
EDCI 325	Elementary Art Education	3
EDCI 327	Elementary Math Education	3
EDCI 328	Elementary Social Studies Education	3
EDCI 329	Elementary Science Education	3
EDCI 401	Internship Seminar	1
EDCI 408	Integrated Elementary Methods Practicum I	3
EDCI 409	Integrated Elementary Methods Practicum II	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 483	Elementary Internship I	7
EDSP 300	Educating for Exceptionalities	3
EDSP 325	Supporting Student Behaviors in the Classroom	3
EDSP 350	Language and Communication Development and Disorders	3
EDSP 484	Special Education Internship II	7
ECDE 210	Introduction to Early Childhood Education	2
ECDE 234	Infancy and Early Childhood	3
ECDE 235	Principles and Methods of Child Observation	3
ECDE 333	Developmental Curriculum for Young Children	4
ECDE 340	Parent-Child Relationships in Family and Community	3
ECDE 435	Feeding Young Children in Group Settings	1
ECDE 436	Theories of Child and Family Development	3
ECDE 480	Assessment: Early Childhood/SPED	3
ECDE 481	Early Childhood SPED Curriculum	3
ECDE 490	Infant & Toddler SPED Internship	1-7
ECDE 497	INTERN: Preschool	1-16
MTHE 235	Mathematics for Elementary Teachers I	3
PEP 350	Elementary Health and Physical Education	3

Total Hours 90-111

Courses to total 120 credits for this degree

Fall Term 1	Hours	
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
ECDE 210	Introduction to Early Childhood Education	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours	16	
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
ECDE 234	Infancy and Early Childhood	3
Scientific Ways of Knowing Course		4
HIST 111 OR HIST 112 OR POLS 101		3
Hours	13	
Fall Term 2		
ECDE 340	Parent-Child Relationships in Family and Community	3
ECDE 235	Principles and Methods of Child Observation	3
EDSP 300	Educating for Exceptionalities	3
Humanistic and Artistic Ways of Knowing Course		3

Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 2		
ECDE 333	Developmental Curriculum for Young Children	4
EDCI 302	Teaching Culturally Diverse Learners	3
ECDE 435	Feeding Young Children in Group Settings	1
Humanistic and Artistic Ways of Knowing Course		3
Hours		11
Summer Term 2		
EDSP 325	Supporting Student Behaviors in the Classroom	3
EDSP 350	Language and Communication Development and Disorders	3
Hours		6
Fall Term 3		
ECDE 436	Theories of Child and Family Development	3
ECDE 480	Assessment: Early Childhood/SPED	3
MTHE 235	Mathematics for Elementary Teachers I	3
International Course		3
Hours		12
Spring Term 3		
ECDE 481	Early Childhood SPED Curriculum	3
EDCI 320	Teaching Reading and Literacy	3
EDCI 322	Teaching Writing/Language Arts	3
EDCI 325	Elementary Art Education	3
EDCI 409	Integrated Elementary Methods Practicum II	1
EDCI 321	Literature for Children	3
Hours		16
Fall Term 4		
ECDE 497	INTERN: Preschool	9
MTHE 236	Mathematics for Elementary Teachers II	3
Hours		12
Spring Term 4		
EDCI 327	Elementary Math Education	3
EDCI 328	Elementary Social Studies Education	3
EDCI 329	Elementary Science Education	3
EDCI 408	Integrated Elementary Methods Practicum I	3
EDCI 410	Technology, Teaching and Learning	2
PEP 350	Elementary Health and Physical Education	3
Hours		17
Summer Term 4		
ECDE 490	Infant & Toddler SPED Internship	7
Hours		7
Fall Term 5		
EDCI 401	Internship Seminar	1
EDCI 483	Elementary Internship I	7
EDSP 484	Special Education Internship II	7
Hours		15
Total Hours		140

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Learn and Integrate: Idaho Teacher Certification Standard 4: Multiple Instructional Strategies - The teacher understands and uses a variety of instructional strategies to develop student learning.

2. Think and Create: Idaho Teacher Certification Standard 7: Instructional Planning Skills - The teacher plans and prepares instruction based on knowledge of subject matter, students, the community, curriculum goals, and instructional strategies.

3. Communication: Idaho Teacher Certification Standard 6: Communication Skills - The teacher uses a variety of communication techniques to foster learning and communication skills in the classroom.

4. Clarify Purpose and Perspective: Idaho Teacher Certification Standard 5 - The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

5. Practice Citizenship: Idaho Teacher Certification Standard 10 - The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

Family and Consumer Sciences (B.S.)

Required coursework includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
HDFS 105	Individual and Family Development	3
ATD 119	Introduction to Fashion and the Apparel Industry	3
ATD 123	Textiles	3
FN 205	Concepts in Human Nutrition	3
ECDE 210	Introduction to Early Childhood Education	3
ATD 224	Apparel Construction and Assembly Processes	3
ECDE 234	Infancy and Early Childhood	3
ECDE 235	Principles and Methods of Child Observation	3
HDFS 240	Intimate Relationships	3
FCS 251	Survey of FCS Professions	1
FN 270	Scientific Principles of Food Preparation	3
FN 271	Scientific Principles of Food Preparation Lab	2
ATD 223	Fashion Business and Product Development	3
HDFS 334	Adolescence and Emerging Adulthood	3
ECDE 340	Parent-Child Relationships in Family and Community	3
FCS 346	Personal and Family Finance and Management	4
FN 370	Meal Management	3
HDFS 401	Professional Ethics and Practice in CFCS	1
ATD 449	Dress and Culture	3
HDFS 440	Contemporary Family Relationships	3
FN 305	Nutrition in the Life Cycle	3
FCS 498	Internship	3
Electives - see suggestions below:		23
ATD 239	Digital Illustration for the Apparel Industry	
ATD 349	History of Western Dress	
FCS 346	Personal and Family Finance and Management	
FN 415	Advanced Nutrition	
FCS 428	Housing America's Families	

HDFS 434	Adulthood and Aging within the Context of Family	Total Hours
		85

Students seeking FCS teacher certification must also meet the following requirements. It is recommended that students pursue a dual degree: B.S. in Family and Consumer Sciences and B.S. in Education. 31 additional credits required.

Code	Title	Hours
EDCI 201	Contexts of Education	3
EDCI 401	Internship Seminar	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
CTE/AGED 351	Principles and Philosophy of Career and Technical Education	3
CTE 420	Assessment in Contextual Learning Environments	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 430 & CTE 431	Leadership and Student Organizations and Supervising CTE Career and Technical Student Organizations	3
or AGED 358	Supervising FFA and SAE Programs	
CTE 447	Diverse Populations and Individual Differences	3
CTE 464	Career Guidance and Transitioning to Work	3
CTE 472	Teaching and Learning in Organizations	3
or AGED 452	Methods of Teaching Agriculture	
Total Hours		33

Courses to total 120 credits for this degree

Fall Term 1	Hours	
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
HDFS 105	Individual and Family Development	3
Mathematical Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1	Hours	
ENGL 102	Writing and Rhetoric II	3
ATD 119	Introduction to Fashion and the Apparel Industry	3
FN 205	Concepts in Human Nutrition	3
Social and Behavioral Ways of Knowing Course		3
Elective Course		2
Hours		14
Fall Term 2	Hours	
ATD 123	Textiles	3
ECDE 210	Introduction to Early Childhood Education	3
FCS 251	Survey of FCS Professions	1
ATD 124	Introduction to Apparel Construction	2
Humanistic and Artistic Ways of Knowing Course		3
FCS elective, Major Elective Course		3
Hours		15
Spring Term 2	Hours	
ATD 224	Apparel Construction and Assembly Processes	3
ECDE 234	Infancy and Early Childhood	3
HDFS 240	Intimate Relationships	3
Humanistic and Artistic Ways of Knowing Course		3

Social and Behavioral Ways of Knowing Course		3
Hours		15
Fall Term 3		
ECDE 235	Principles and Methods of Child Observation	3
FN 270	Scientific Principles of Food Preparation	3
HDFS 334	Adolescence and Emerging Adulthood	3
American Diversity Course		3
FCS elective, Major Elective Course		3
Hours		15
Spring Term 3		
FCS 346	Personal and Family Finance and Management	4
FN 271	Scientific Principles of Food Preparation Lab	2
ATD 223	Fashion Business and Product Development	3
FCS elective, Major Elective Course		3
FCS elective, Major Elective Course		3
Hours		15
Fall Term 4		
ECDE 340	Parent-Child Relationships in Family and Community	3
FN 370	Meal Management	3
HDFS 401	Professional Ethics and Practice in CFCS	1
ATD 449	Dress and Culture	3
FCS 498	Internship	3
FCS elective, Major Elective Course		3
Hours		16
Spring Term 4		
FN 305	Nutrition in the Life Cycle	3
FCS elective, Major Elective Course		3
FCS elective, Major Elective Course		3
FCS elective, Major Elective Course		3
HDFS 440 OR HDFS 445		3
Hours		15
Total Hours		121

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Foundations:

- Understand global nature and scope of industry
- Fiber and textiles understanding
- Understand and apply knowledge: target market, product development, consumer, and consumerism
- Awareness of communication skills and tools

2. Career Development and Professional Skills:

- Identify and evaluate social responsibility, professional behavior, and ethics
- Demonstrate necessary skills for careers, including communication in written, verbal, and visual forms
- Function as a team member or leader
- Apply concepts and knowledge in workplace and industry contexts

3. Product Development:

- Identify and understand target consumer
- Relate elements and principles of design to product development
- Critical thinking, creative thinking, and creative problem solving
- Communicate in written, verbal, and visual forms
- Evaluate product quality, serviceability, and regulatory standards

4. Senior Capstone Experience:

- Understand and apply concept of target market
- Understand and apply concept of product development
- Understand and apply concept of line development
- Fiber and textiles applications
- Communication skills and tools in written, verbal, and visual forms

5. Understanding the Consumer:

- Understand appearance, human behavior, aesthetic preferences, economic and purchasing decisions, and social, historical, and cultural factors
- Understand concept of dress related to intra- and inter-cultural and social interactions
- Apply knowledge of dress and culture across life stages, time, and culture
- Communicate in written, verbal, and visual forms
- Advocate for and influence family policies
- Value family diversity and community relationships
- Participate in a leadership role in student activities and organizations
- Adhere to and model professional and ethical standards

6. Express Ideas Clearly:

- Acquire, articulate, create, and convey intended meaning using written and verbal methods of communication, and state-of-the-art technology where appropriate
- Use and value communication skills (listening, speaking, writing) with diverse audiences
- Critically read, evaluate, and communicate knowledge
- Articulate the philosophy, integration, and benefit of the Family and Consumer Sciences perspective

7. Students will be thoughtful and sensitive to the values of others, be able to work with others with value systems different from their own, and appreciate and respect diversity.

8. Students will gain knowledge in understanding individual and family development across the lifespan. The focus is on theories of development, healthy relationships, and personal finance, so students can apply what they learn and be prepared for work in human services or graduate school.

9. Students can use critical thinking, problem solving, the creative process, and integrate information across disciplines to address the complex issues facing individuals and families locally, statewide, nationally, and globally.

10. Students will be able to identify a real-world nutrition issue for a specific population and develop a lesson plan to address that need.

11. Students will be able to communicate nutrition education messages through verbal (food demonstration) and nonverbal (handouts and materials) methods.

12. Students will be able to integrate knowledge from FCS 105, FCS 205, FCS 270, FCS 275, and FCS 486 to develop an appropriate nutrition education curriculum for a selected lifespan group.

13. Students will be able to review theoretical frameworks related to nutrition education and develop a theory-based approach for a nutrition education program.

14. Students will be able to reflect upon nutrition education curriculum development experience and write a nutrition education philosophy.

15. Students will be able to apply principles of diversity and sustainability to development of nutrition education curriculum.

Family and Consumer Sciences (M.S.)

Master of Science. Major in Family and Consumer Sciences.

A letter of intent, which includes a statement of goals, objectives, and academic interests, and three letters of recommendation are required for admission. Information may be obtained at the school.

1. Thesis Option: Thirty credits of course work including a 13-credit emphasis area in family and consumer sciences and related areas, two graduate seminars, courses in theory and research methods and analysis, and at least 6 credits of thesis research.
2. Non-thesis Option: Thirty-four credits of course work including a 17-19 credit emphasis area in family and consumer sciences and related areas, two graduate seminars, courses in theory and research methods and analysis, and a master's project.

Please see the Family and Consumer Sciences graduate handbook (<https://www.uidaho.edu/cals/family-and-consumer-sciences/graduate-handbook/>) for details and program requirements on earning the Master's in Family and Consumer Sciences degree.

1. Use interdisciplinary strategies to identify prevention or solutions for emerging issues for individuals, families, and communities.
2. Demonstrate competence in content area.
3. Work successfully on teams and contribute positively to interdisciplinary projects.
4. Articulate the philosophy, integration, and benefits of the Family and Consumer Sciences perspective.
5. Adhere to, model, and advocate for professional and ethical standards.

Food and Nutrition (B.S.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 227	Anatomy and Physiology I	4

BIOL 228	Anatomy and Physiology II	4
BIOL 250	General Microbiology	3
or EPPN 154	Microbiology and the World Around Us	
BIOL 255	General Microbiology Lab	1-2
or EPPN 155	Microbiology and the World Around Us: Laboratory	
BIOL 300	Survey of Biochemistry	3-4
or BIOL 380	Biochemistry I	
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
CHEM 101	Introduction to Chemistry	3
or CHEM 111	General Chemistry I	
CHEM 101L	Introduction to Chemistry Laboratory	1
or CHEM 111L	General Chemistry I Laboratory	
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
FCS 346	Personal and Family Finance and Management	4
FN 205	Concepts in Human Nutrition	3
FN 270	Scientific Principles of Food Preparation	3
FN 271	Scientific Principles of Food Preparation Lab	2
FN 305	Nutrition in the Life Cycle	3
FN 370	Meal Management	3
FN 415	Advanced Nutrition	3
FN 450	Global Nutrition	3
FN 464	Nutrition Counseling	3
FN 465	Clinical Dietetics	3
FN 470	Quantity Food Production and Equipment	3
FN 491	Community Nutrition	3
FN 492	Nutrition Education	3
HDFS 105	Individual and Family Development	3
MATH 143	College Algebra	3-4
or MATH 170	Calculus I	
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
STAT 251	Statistical Methods	3

Total Hours 83-86

Courses to total 120 credits for this degree

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
FN 205	Concepts in Human Nutrition	3
COMM 101	Fundamentals of Oral Communication	3
MATH 143 OR MATH 170	Math 108 if not placed into 143 or 170	3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
PSYC 101	Introduction to Psychology	3
FN 270	Scientific Principles of Food Preparation	3
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 275	Carbon Compounds	3
or CHEM 277	or Organic Chemistry I	
Hours		16
Fall Term 2		Hours
BIOL 227	Anatomy and Physiology I	4

BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
HDFS 105	Individual and Family Development	3
SOC 101	Introduction to Sociology	3
Hours		14
Spring Term 2		
BIOL 228	Anatomy and Physiology II	4
FN 271	Scientific Principles of Food Preparation Lab	2
(BIOL 250 AND BIOL 255) OR (EPPN 154 AND EPPN 155)		4
Humanistic and Artistic Ways of Knowing Course		3
Elective		3
Hours		16
Fall Term 3		
BIOL 300 or BIOL 380	Survey of Biochemistry or Biochemistry I	3
FN 305	Nutrition in the Life Cycle	3
FN 370	Meal Management	3
STAT 251	Statistical Methods	3
American Diversity Course		3
Hours		15
Spring Term 3		
FCS 346	Personal and Family Finance and Management	4
FN 415	Advanced Nutrition	3
Humanistic and Artistic Ways of Knowing Course		3
Elective		3
Elective		2
Hours		15
Fall Term 4		
FN 470	Quantity Food Production and Equipment	3
FN 471	Quantity Food Production and Equipment Lab	2
FN 464	Nutrition Counseling	3
FN 491	Community Nutrition	3
Elective Course		3
Hours		14
Spring Term 4		
FN 492	Nutrition Education	3
FN 465	Clinical Dietetics	3
FN 450	Global Nutrition	3
Elective Course		3
Elective Course		2
Hours		14
Total Hours		120

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1. The student will be able to apply foundational sciences to food and nutrition knowledge to meet the needs of individuals, groups, and organizations.
2. The student will be able to apply and integrate client/patient-centered principles and competent nutrition and dietetics practice to ensure positive outcomes when addressing real-world nutrition issues.
3. The student will be able to apply food systems principles and management skills to ensure safe and efficient delivery of food.
4. The student will be able to demonstrate professional behaviors and effective communication in all nutrition and dietetics interactions.

5. The student will be able to apply community and population nutrition health theories when providing support to community or population nutrition programs through diverse global perspectives.
6. The student will be able to integrate evidence-informed practice, critical thinking, respect for diversity, and principles of sustainability while working collaboratively to promote food and nutrition.
7. The student will be able to demonstrate leadership, business, and management principles to implement and evaluate delivery of food and nutrition services.

Human and Community Engagement Minor

Code	Title	Hours
CLDR/FCS 220	Introduction to Human and Community Engagement	1
CLDR 360	Leadership and Community Dynamics	3
CLDR/FCS 420	Advanced Human and Community Engagement Experience	2
HDFS 105	Individual and Family Development	3
Human Engagement: (Choose 6 credits from these courses, 3 of which must be from FCS.)		6
COMM 233	Interpersonal Communication	
COMM 335	Intercultural Communication	
COMM 340	Family Communication	
COMM 410	Conflict Management	
HDFS 240	Intimate Relationships	
ECDE 254	Middle Childhood Development	
HDFS 334	Adolescence and Emerging Adulthood	
ECDE 340	Parent-Child Relationships in Family and Community	
HDFS 360	Sexuality Across the Lifespan	
HDFS 434	Adulthood and Aging within the Context of Family	
ECDE 436	Theories of Child and Family Development	
HDFS 440	Contemporary Family Relationships	
HDFS 445	Issues in Work and Family Life	
Community Engagement: (Choose 6 credits from these courses, 3 of which must be from CLDR.)		6
AGED 359	Developing 4-H Youth Programs	
CLDR 450	Leading People and Teams	
CLDR 480	Change and Power in a Global Society	
ORGS 305	Nonprofit Organizations	
SOC 201	Introduction to Inequity and Justice	

Total Hours 21

Courses to total 21 credits for this minor

Human Development and Family Studies (B.S.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/#j3>)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
COMM 335 or SOC 201	Intercultural Communication Introduction to Inequity and Justice	3
ECDE 234	Infancy and Early Childhood	3
ECDE 254	Middle Childhood Development	3
ECDE 340	Parent-Child Relationships in Family and Community	3
ECDE 436	Theories of Child and Family Development	3
FCS 251 or INTR 201	Survey of FCS Professions Major/Career Exploration and Decision Making	1
FCS 346	Personal and Family Finance and Management	4
FCS 428 or FCS 448	Housing America's Families Consumer Economic Issues	3
FCS 498	Internship	3-9
FN 205	Concepts in Human Nutrition	3
FN 305 or FN 492 or FN 491	Nutrition in the Life Cycle Nutrition Education Community Nutrition	3
HDFS 105	Individual and Family Development	3
HDFS 240	Intimate Relationships	3
HDFS 334	Adolescence and Emerging Adulthood	3
HDFS 360	Sexuality Across the Lifespan	3
HDFS 401	Professional Ethics and Practice in CFCS	1
HDFS 434	Adulthood and Aging within the Context of Family	3
HDFS 440	Contemporary Family Relationships	3
HDFS 445	Issues in Work and Family Life	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
STAT 251	Statistical Methods	3
Select one Social Science Research Course:		3-4
ORGS 444	Methods and Analysis in Organizational Science	
PSYC 218	Introduction to Research in the Behavioral Sciences	
SOC 416	Qualitative Social Science Methods	
SOC 417	Social Data Analysis	

Total Hours 69-76

Courses to total 120 credits for this degree

Term	Code	Title	Hours
Fall Term 1	COMM 101	Fundamentals of Oral Communication	3
	ENGL 101	Writing and Rhetoric I	3
	HDFS 105	Individual and Family Development	3
		Scientific Ways of Knowing Course	4
		Mathematical Ways of Knowing Course	3
		Hours	16
Spring Term 1	ENGL 102	Writing and Rhetoric II	3
	ECDE 234	Infancy and Early Childhood	3
	SOC 101	Introduction to Sociology	3
		Scientific Ways of Knowing Course	4
		Elective Course	1
		Hours	14
Fall Term 2	ECDE 254	Middle Childhood Development	3

FN 205	Concepts in Human Nutrition	3
FCS 251 or INTR 201	Survey of FCS Professions or Major/Career Exploration and Decision Making	1
	Humanistic and Artistic Ways of Knowing Course	3
	American Diversity Course	3
	Elective Course	2
	Hours	15
Spring Term 2		
HDFS 240	Intimate Relationships	3
PSYC 101	Introduction to Psychology	3
STAT 251	Statistical Methods	3
COMM 335 OR SOC 201		3
	Humanistic and Artistic Ways of Knowing Course	3
	Hours	15
Fall Term 3		
HDFS 334	Adolescence and Emerging Adulthood	3
HDFS 360	Sexuality Across the Lifespan	3
ORGS 444 OR PSYC 218 OR SOC 416 OR SOC 417		3
	International Course	3
	Elective Course	3
	Hours	15
Spring Term 3		
FCS 346	Personal and Family Finance and Management	4
FCS 428 or FCS 448	Housing America's Families or Consumer Economic Issues	3
HDFS 434	Adulthood and Aging within the Context of Family	3
HDFS 440	Contemporary Family Relationships	3
ATD 349 OR ATD 449		3
	Hours	16
Fall Term 4		
ECDE 340	Parent-Child Relationships in Family and Community	3
ECDE 436	Theories of Child and Family Development	3
HDFS 401	Professional Ethics and Practice in CFCS	1
	Elective Course	3
	Elective Course	3
	Elective Course	2
	Hours	15
Spring Term 4		
HDFS 445	Issues in Work and Family Life	3
FN 305 or FN 491 or FN 492	Nutrition in the Life Cycle or Community Nutrition or Nutrition Education	3
FCS 498	Internship (6-9 credits)	6
	Elective Course	2
	Hours	14
	Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Learn and Integrate: Students completing the program will obtain knowledge in understanding individual and family development across the lifespan as well as gain practical experience via community engagement, internships, and career development and professional skill-building opportunities. With a focus on theories of human development and the qualities and factors associated with healthy relationships and strong family dynamics, this degree prepares students for multiple and varied career paths in human services, continued educational and

research opportunities in graduate programs, and applied skills for improving their own and others' well-being.

2. **Think and Create:** Use critical thinking, problem solving, the creative process, and integrate information across disciplines to address the complex issues facing individuals and families locally, statewide, nationally, and globally.

3. **Communicate:** Express ideas clearly; acquire, articulate, create, and convey intended meaning using written and verbal methods of communication, and state-of-the-art technology where appropriate; use and value communication skills (listening, speaking, writing) with diverse audiences; critically read, evaluate, and communicate knowledge of; articulate the philosophy, integration and benefit of family studies and a lifespan perspective of human development.

4. **Clarify Purpose and Perspective:** Students will be thoughtful and sensitive to the values of others, be able to work with others with value systems different from their own; and appreciate and respect diversity.

5. **Practice Citizenship:** Advocate for and influence ethical family policies, value family diversity and community relationships, participate in a leadership role in student activities and organizations, adhere to and model professional and ethical standards.

Nutrition Minor

Code	Title	Hours
FN 205	Concepts in Human Nutrition	3
FN 305	Nutrition in the Life Cycle	3
FN 491	Community Nutrition	3
FN 450	Global Nutrition	3
Choose 6 credits from the following courses		6
FN 270	Scientific Principles of Food Preparation	
FS 220	Food Safety and Quality	
AGED 263	History of U.S. and World Agriculture	
AGED 407	Global Agricultural & Life Sciences Systems	
ANTH 350	Food, Culture, and Society	
FN 370	Meal Management	
FN 415	Advanced Nutrition	
FN 492	Nutrition Education	
FN 376	Food Preservation	
FCS 499	Directed Study	
Total Hours		18

Courses to total 18 credits for this minor

Nutritional Sciences (B.S.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 227	Anatomy and Physiology I	4
BIOL 228	Anatomy and Physiology II	4

BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	5
BIOL 300 or BIOL 380	Survey of Biochemistry Biochemistry I	3
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312 & BIOL 313	Molecular and Cellular Biology and Molecular and Cellular Laboratory	4
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4
HDFS 105	Individual and Family Development	3
FN 205	Concepts in Human Nutrition	3
FN 415	Advanced Nutrition	3
FN 466	Nutrition Assessment Laboratory	1
FN 491	Community Nutrition	3
FN 305	Nutrition in the Life Cycle	3
FN 453 or PEP 455	Research Methods in Food Nutrition Design & Analysis of Research in Movement Sciences	3
MATH 143 or MATH 170	College Algebra Calculus I	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
STAT 251	Statistical Methods	3
Select 8 credits of FCS electives		8
Advisor Approved Pre-Health Elective		8
Total Hours		88

Courses to total 120 credits for this degree

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
FN 205	Concepts in Human Nutrition	3
HDFS 105	Individual and Family Development	3
MATH 143	College Algebra	3
Oral Communication Course		3
Hours		15
Spring Term 1		Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
FN 205	Concepts in Human Nutrition	3
PSYC 101	Introduction to Psychology	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Fall Term 2		Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
SOC 101	Introduction to Sociology	3
FCS Elective, Major Elective Course		3
Hours		15
Spring Term 2		Hours
BIOL 250	General Microbiology	3

BIOL 255	General Microbiology Lab	2
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
STAT 251	Statistical Methods	3
FCS Elective, Major Elective Course		3
Hours		15
Fall Term 3		
BIOL 227	Anatomy and Physiology I	4
BIOL 300 or BIOL 380	Survey of Biochemistry or Biochemistry I	3
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
FCS Elective, Major Elective Course		2
Elective Course		3
Hours		16
Spring Term 3		
BIOL 228	Anatomy and Physiology II	4
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
Pre-Health Elective, Major Elective Course		4
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Fall Term 4		
FN 305	Nutrition in the Life Cycle	3
FN 415	Advanced Nutrition	3
FN 491	Community Nutrition	3
American Diversity Course		3
Elective Course		3
Hours		15
Spring Term 4		
FN 466	Nutrition Assessment Laboratory	1
FN 453 or PEP 455	Research Methods in Food Nutrition or Design & Analysis of Research in Movement Sciences	3
International Course		3
Pre-Health Elective, Major Elective Course		3
Elective Course		3
Hours		13
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

MATH 170 Starting Mathematics Plan

		Hours
Fall Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 101	Writing and Rhetoric I	3
FN 205	Concepts in Human Nutrition	3
HDFS 105	Individual and Family Development	3
MATH 170	Calculus I	4
Hours		17
Spring Term 1		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1

ENGL 102	Writing and Rhetoric II	3
PSYC 101	Introduction to Psychology	3
Hours		15
Fall Term 2		
BIOL 227	Anatomy and Physiology I	4
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
FCS Elective, Major Elective Course		3
American Diversity Course		3
Hours		15
Spring Term 2		
BIOL 228	Anatomy and Physiology II	4
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
STAT 251	Statistical Methods	3
FCS Elective, Major Elective Course		3
Hours		14
Fall Term 3		
BIOL 300 or BIOL 380	Survey of Biochemistry or Biochemistry I	3
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
FN 305	Nutrition in the Life Cycle	3
Oral Communication Elective		3
Humanistic Ways of Knowing		3
Hours		16
Spring Term 3		
FN 415	Advanced Nutrition	3
FN 450	Global Nutrition	3
Humanistic and Artistic Ways of Knowing Course		3
Pre-Health Elective		4
FCS Elective, Major elective		3
Hours		16
Fall Term 4		
FN 491	Community Nutrition	3
SOC 101	Introduction to Sociology	3
Pre-Health Elective		4
FCS Elective, Major elective		4
Hours		14
Spring Term 4		
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
FN 453 or PEP 455	Research Methods in Food Nutrition or Design & Analysis of Research in Movement Sciences	3
FN 466	Nutrition Assessment Laboratory	1
International Course		3
Elective		2
Hours		13
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Learn and Integrate: Understand nutritional science from the perspective of human metabolism with in-depth concentration on physiological and biochemical reactions. Integrate nutrition metabolism

in the context of social, economic, and environmental factors affecting food sources and nutrient composition.

2. Think and Create; Communicate; Practice Citizenship: Obtain knowledge and develop skills in research methods and design to expand the field of nutrition sciences via dissemination of new scientific findings and improve the health of the general public.

3. Clarify Purpose and Perspective: Integrate nutrition metabolism in the context of social, economic, and environmental factors affecting food sources and nutrient composition.

Nutritional Sciences (M.S.)

Thesis Option:

Code	Title	Hours
FCS 501	Seminar	2
FCS 502	Directed Study	4
400- or 500-level Statistics course		3
400- or 500-level Research Methods course		3
Select 6 credits of 500-level or above FCS courses		6
FCS 500 credits can not be counted in this total		
Select 12 credits of 500-level or above courses		12
Up to 10 credits of FCS 500 can be counted in this total		
Total Hours		30

Non-thesis Option:

Code	Title	Hours
FCS 501	Seminar	2
FCS 502	Directed Study	4
400- or 500-Level Statistics course		3
400- or 500-Level Research Methods course		3
Select 6 credits of 500-level or above FCS courses		6
FCS 599 credits can not be counted in this total		
Select 24 credits of 500-level or above courses		24
Up to 5 credits of FCS 599 can be counted in this total		
Total Hours		42

Courses to total 30 credits for thesis option and 42 credits for non-thesis option for this degree.

- Gain in-depth fundamental principles of nutritional sciences.
- Analyze, interpret, and critique the literature pertaining to nutritional sciences.
- Understand appropriate and optimal research design, statistical analyses, and conducts.
- Develop strong written and oral communication skills.

Nutritional Sciences (Ph.D.)

Code	Title	Hours
FCS 501	Seminar (1 cr taken every Fall semester for 3 years)	3
500-level or above Statistical Analysis course		3
500-level or above Research Methods course		3
Additional 500-level or above courses as determined with committee		43

Up to 15 credits of FCS 600 can be counted in this total

Additional courses	26
Total Hours	78

Courses to total 78 credits for this degree.

- Gain expertise in the fundamental principles of nutritional sciences.
- Comprehend the complex interrelationships between nutrition, health, and disease.
- Develop theoretical and methodological skills in selected area of nutritional research.
- Acquire robust written and oral communication skills to disseminate scientific information.
- Begin to contribute to the betterment of human and/or animal nutrition regionally, nationally, and/or globally.

Program in Water Resources

Timothy Link, Director, Water Resources Graduate Program

(College of Natural Resources 83844-1133; phone 208-885-9465; water@uidaho.edu; <https://www.uidaho.edu/cals/majors-and-degrees/ms-phd-water-resources> (<https://www.uidaho.edu/cals/majors-and-degrees/ms-phd-water-resources/>)).

The interdisciplinary graduate program in Water Resources is administered by the College of Agricultural and Life Sciences.

The Water Resources Program offers M.S. and Ph.D. degrees in Water Resources with the ability to complete a concurrent M.S./J.D. in 4 years and a Ph.D./J.D. in 6 years. The three program option areas are Water Resources Engineering & Science, Water Resources Science & Management, and Water Resources Law, Management & Policy. The program trains students to address complex water resources issues by building disciplinary depth in concert with multidisciplinary breadth to understand focused problems and communicate across disciplines.

The Water Resources Program enjoys university-wide participation and forms a coordinated effort that provides interdisciplinary study options in Water Resources. Participants are drawn from the Colleges of Agriculture and Life Sciences (CALS); Art and Architecture (CAA); Education; Health and Human Sciences (CEHHS); Engineering (ENG); Law (LAW); Science (COS); Letters, Arts, and Social Sciences (CLASS); and Natural Resources (CNR). The Program includes faculty from the Moscow campus and the Boise, Idaho Falls, Twin Falls, and Coeur d'Alene/Post Falls Centers. Water Resources faculty collaborate with the Idaho Water Resources Research Institute and faculty at Boise State University, Idaho State University, and Washington State University.

Graduate Degree Programs

Students in the Water Resources Program must meet the general requirements set forth by the College of Graduate Studies for the M.S. or Ph.D. degrees with the following exceptions: The degree of M.S. in Water Resources requires 24 credits of course work and completion of a thesis, equivalent to a minimum of 6 credits of Research and Thesis, for a total of 30 credits (note for transfers: an M.S. student must complete at least 18 of the total 30 required credits at the University of Idaho while matriculated in the College of Graduate Studies), and the degree of Ph.D. in Water Resources requires a minimum of 33 credits of coursework beyond the bachelor's degree and completion of a dissertation, for a total of 78 credits (note for transfers: A Ph.D. student must complete at least 39 of the 78 required credits at the University of Idaho while matriculated

in the College of Graduate Studies). Students in the Water Resources concurrent J.D. track must meet the general requirements set forth by the College of Graduate Studies and Water Resources Program for the M.S. or Ph.D. degrees and the College of Law for the J.D. The following sections summarize specific requirements for the three option areas as well as for the joint M.S./J.D. and Ph.D./J.D.

Thesis/Dissertation Requirements

Each thesis/dissertation may reflect integration beyond a single discipline. Integration can be achieved throughout the thesis/dissertation or through a separate interdisciplinary chapter (possibly co-authored) that specifically integrates methods and/or information from at least two distinct disciplines to advance the argument(s) in the thesis/dissertation. All chapters shall be integrated into a coherent whole.

Committee Requirements

Each committee shall be composed of members from more than one discipline. For the M.S., a minimum of three members is required; for the Ph.D., a minimum of four members is required. All committee members must approve a) the student's study plan, b) the interdisciplinary component(s) of the thesis/dissertation proposal (if applicable), and c) the interdisciplinary component(s) of the thesis/dissertation at the time of the final defense (if applicable).

Admission Requirements and Procedures

Admission to this program is highly competitive, and recruitment is international in scope. Even exceptional applicants are admitted only when there is an opening with one of the participating faculty. As required by the College of Graduate Studies, all applicants must provide: official transcripts from all colleges and/or universities previously attended, a resume or curriculum vitae, a statement of academic and career goals and research interests that clearly identifies the research they would like to pursue at the University of Idaho, and three letters of reference that speak to the applicant's aptitude for graduate research in water resources. For applicants for whom English is a second language, a TOEFL score of at least 600 (CBT 250) is required. Students can apply to the concurrent degree program only after application and admission to the UI College of Law and to the Water Resources Graduate Program.

To apply, please go to the University of Idaho Graduate Admissions webpage at www.uidaho.edu/admissions/graduate (<https://www.uidaho.edu/admissions/graduate/>) or contact the Graduate Admissions Office, University of Idaho, P.O. Box 444266, Moscow, ID 83844-4266.

Water Resources Graduate Degree Programs

- Water Resources Concurrent J.D. Degree (p. 152)
- Water Resources Engineering and Science Option (M.S.) (p. 153)
- Water Resources Engineering and Science Option (Ph.D.) (p. 153)
- Water Resources Law, Management and Policy Option (M.S.) (p. 154)
- Water Resources Law, Management and Policy Option (Ph.D.) (p. 155)
- Water Resources Science and Management Option (M.S.) (p. 156)
- Water Resources Science and Management Option (Ph.D.) (p. 156)

Water Resources Concurrent J.D. Degree

Entry Requirements

Completion of requirements for admission to both the College of Law and the specific Water Resources option area is required for (M.S. and Ph.D.) admission to earn the Water Resources Concurrent J.D. Degree. Students are required to apply separately to the College of Law and to the Water Resources Program in the College of Graduate Studies, and on acceptance to each college, must apply to the concurrent degree program. Acceptance to both colleges does not have to occur simultaneously. A Steering Committee consisting of the Director of the Water Resources Program, the Associate Dean for Administration and Students of the College of Law, one non-law member of the Water Resources faculty, and one member of the Law faculty makes admission decisions to the concurrent degree program.

Common/Core Courses

All students seeking to earn the Water Resources concurrent J.D. degree are required to complete coursework as specified for the particular Water Resources Option Area for the M.S. or Ph.D., as well as coursework required by the Law School for a J.D.

Elective Courses

The student and faculty committee will select courses appropriate to satisfy the requirements of the Water Resources Program in the College of Graduate Studies and the J.D. in the College of Law.

Concurrent Degree Details

Students in the Water Resources concurrent J.D. track must meet all graduation requirements set forth by the College of Graduate Studies for the M.S. or Ph.D. degrees and the College of Law for the J.D. Each student shall have a "graduate committee." The student's graduate committee must meet the requirements of the College of Graduate Studies and must have at least one member from the faculty of the College of Law.

A total of 18 credits may be double counted for a J.D./M.S. concurrent degree, and a total of 21 credits may be double counted for a J.D./Ph.D. concurrent degree under the following guidelines:

- No more than 12 credits of M.S. and Ph.D. graduate school credit are allowed toward the J.D. degree. The courses must be approved by the student's advisor in the College of Law with the following guidelines: Courses approved for credit toward a J.D. must be complementary to an emphasis in water law, must enhance the candidates ability to serve clients and the legal profession in the area of water law, and must not be the equivalent substantive coverage to a course offered in the College of Law and available to the student.
- No more than 6 credits from Law are allowed toward the M.S. degree in Engineering & Science and Science & Management option areas, no more than 12 credits towards the M.S. degree in Law, Management & Policy option area, and no more than 9 credits toward the Ph.D. degree from the following list:

Code	Title	Hours
LAW 907		3
LAW 934		3
LAW 938		3

LAW 939	2
LAW 942	1-2
LAW 947	3
LAW 948	3
LAW 949	3
LAW 969	2
LAW 979	3

Satisfactory completion of both degrees is required to qualify for the exchange credit, the degrees are granted concurrently. The first year of study for concurrent M.S. or Ph.D. students must be exclusively in the College of Law. M.S. students are required to write a thesis. Ph.D. students are required to write a dissertation. If the student fails to complete the M.S. or Ph.D. in Water Resources, only 6 credits from the Water Resources Program are allowed toward the J.D. degree. If a student fails to complete the J.D. degree, the student must satisfy all requirements for the particular option area in the Water Resources Program to receive the M.S. or Ph.D. degree.

Questions regarding the concurrent degree program should be addressed to the Water Resources Program Coordinator (208-885-6113) or to the College of Law (208-885-6423).

Water Resources Engineering and Science Option (M.S.)

Master of Science. Major in Water Resources - Engineering and Science Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas. The common courses are:

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	2
Select one 500-Level Elective Course ¹		3
Total Hours		6-21

1

(Or 900-level in LAW) In an option area outside the main option area (3 cr for Ph.D. only).

Entry Requirements

Coursework in the following is required for M.S. and Ph.D. admission to the Water Resources Engineering & Science Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (minimum of 9 credits)
- Differential Equations (3 credits)
- Statistics for Scientists/Engineers (3 credits)
- Chemistry (minimum of 4 credits)

- Physics (minimum of 4 credits)
- Engineering Fluid Mechanics (minimum of 3 credits)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 credits):

Code	Title	Hours
CE 421	Engineering Hydrology	3
CE 526	Aquatic Habitat Modeling ¹	3
CE 535	Fluvial Geomorphology and River Mechanics ¹	3
HYDR 509	Quantitative Hydrogeology	3
HYDR 576	Fundamentals of Modeling Hydrogeologic Systems	3
SOIL 515	Soil and Environmental Physics	3

1

Either CE 526 or CE 535 may be used to satisfy this requirement, but not both.

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Science & Management or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

1. Students will understand the diverse philosophical bases of different disciplines and work effectively in interdisciplinary teams to solve complex interdisciplinary water resources challenges.
2. Students will gain knowledge of fundamental scientific theories and concepts within their sub-field of water resources and application to engineering practices.
3. Students develop the breadth and depth of disciplinary understanding and critical thinking to contribute to the design, data collection, and analysis of an original water resources research project.
4. Student will develop written and oral communication skills to engage professional peers in a concise, factually accurate, mechanically correct, and engaging manner.

Water Resources Engineering and Science Option (Ph.D.)

Doctor of Philosophy. Major in Water Resources - Engineering and Science Option

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas. The common courses are:

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	2
Select one 500-level Elective course ¹		3
Total Hours		6-21

1

(Or 900- level in LAW) In an option area outside the main option area (3 cr for Ph.D. only).

Entry Requirements

Coursework in the following is required for M.S. and Ph.D. admission to the Water Resources Engineering & Science Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (minimum of 9 credits)
- Differential Equations (3 credits)
- Statistics for Scientists/Engineers (3 credits)
- Chemistry (minimum of 4 credits)
- Physics (minimum of 4 credits)
- Engineering Fluid Mechanics (minimum of 3 credits)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 credits):

Code	Title	Hours
CE 421	Engineering Hydrology	3
CE 526	Aquatic Habitat Modeling ¹	3
CE 535	Fluvial Geomorphology and River Mechanics ¹	3
HYDR 509	Quantitative Hydrogeology	3
HYDR 576	Fundamentals of Modeling Hydrogeologic Systems	3
SOIL 515	Soil and Environmental Physics	3

1

Either CE 526 or CE 535 may be used to satisfy this requirement, but not both.

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Science & Management or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

1. Students will understand the diverse philosophical bases of different disciplines and work effectively in interdisciplinary teams to solve complex interdisciplinary water resources challenges.
2. Students will gain knowledge of fundamental scientific theories and concepts within their sub-field of water resources and application to engineering practices.
3. Students will independently synthesize key knowledge gaps to conceptualize, develop, and implement a novel disciplinary and/or interdisciplinary water resources research project.

4. Students will develop written and oral communication skills to engage professional peers and the public in a concise, factually accurate, mechanically correct, and engaging manner.

Water Resources Law, Management and Policy Option (M.S.)

Master of Science. Major in Water Resources - Law, Management and Policy Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas.

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	2
Select one 500-level Elective Course ¹		3
Total Hours		6-21

1

(Or 900- level in LAW) in an option area outside the main option area (3 credits for Ph.D. only).

Entry Requirements

A background in government, public policy, or management is required for M.S. and Ph.D. admission to the Law, Management, and Policy Option Area. Students without an undergraduate degree in Political Science, Public Policy, Government, or entering the concurrent J.D. program, or related field may be granted provisional admission, but they are required to complete coursework (in addition to standard program and option area requirements) that demonstrates a minimum level of competency. This should include:

- American Government (6 credits at the 400 level)
- Public Policy (6 credits at the 400 level) **or**

Both requirements above may be met by taking equivalent law courses including:

- Constitutional Law and Civil Procedure (12 credits at the 900 level, as approved by major advisor)
- Subject to approval of the Water Resources Program curriculum committee, other relevant completed courses (or professional experience) may be substituted to meet these requirements.

Core Courses

All students in the Water Resources Law, Management & Policy Option Area are required to complete:

Research or Analytical Methods (3 credits, determined in consultation with committee)

The student and committee select the appropriate mix of Law, Management and Policy courses from the following list. Law students are encouraged to take non-law courses. Non-law students are encouraged to take courses from at least two disciplines. M.S. students are required

to take 6 credits, and Ph.D. students 9 credits from the following (6 or 9 credits):

Code	Title	Hours
AGEC 577		3
NRS 573		3
LAW 942	(Max 2credits)	1-2
LAW 946		2
LAW 947		3
LAW 951		3

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either Engineering & Science or Science & Management Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

1. Students will understand the diverse philosophical bases of different disciplines and work effectively in interdisciplinary teams to solve complex interdisciplinary water resources challenges.
2. Students will gain knowledge of fundamental tenets and the interfaces between water resources law, management, and policy.
3. Students develop the breadth and depth of disciplinary understanding and critical thinking to contribute to the design, data collection, and analysis of an original water resources research project.
4. Student will develop written and oral communication skills to engage professional peers in a concise, factually accurate, mechanically correct, and engaging manner.

Water Resources Law, Management and Policy Option (Ph.D.)

Doctor of Philosophy. Major in Water Resources - Law, Management and Policy Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas.

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	2
Select one 500-level Elective course ¹		3

1

(Or 900-level in LAW) in an option area outside the main option area (3 credits for Ph.D. only).

Entry Requirements

A background in government, public policy, or management is required for M.S. and Ph.D. admission to the Law, Management, and Policy Option Area. Students without an undergraduate degree in Political Science, Public Policy, Government, or entering the concurrent J.D. program, or

related field may be granted provisional admission, but they are required to complete coursework (in addition to standard program and option area requirements) that demonstrates a minimum level of competency. This should include:

- American Government (6 credits at the 400 level)
- Public Policy (6 credits at the 400 level) or

Both requirements above may be met by taking equivalent law courses including:

- Constitutional Law and Civil Procedure (12 credits at the 900 level, as approved by major advisor)
- Subject to approval of the Water Resources Program curriculum committee, other relevant completed courses (or professional experience) may be substituted to meet these requirements.

Core Courses

All students in the Water Resources Law, Management & Policy Option Area are required to complete:

- Research or Analytical Methods (3 credits determined in consultation with committee)

The student and committee select the appropriate mix of Law, Management and Policy courses from the following list. Law students are encouraged to take non-law courses. Non-law students are encouraged to take courses from at least two disciplines. M.S. students are required to take 6 credits, and Ph.D. students 9 credits from the following (6 or 9 credits):

Code	Title	Hours
AGEC 577		3
NRS 573		3
LAW 942	(Max 2 credits)	1-2
LAW 946		2
LAW 947		3
LAW 951		3

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either Engineering & Science or Science & Management Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

1. Students will understand the diverse philosophical bases of different disciplines and work effectively in interdisciplinary teams to solve complex interdisciplinary water resources challenges.
2. Students will gain knowledge of fundamental tenets and the interfaces between water resources law, management, and policy.
3. Students will independently synthesize key knowledge gaps to conceptualize, develop, and implement a novel disciplinary and/or interdisciplinary water resources research project.
4. Students will develop written and oral communication skills to engage professional peers and the public in a concise, factually accurate, mechanically correct, and engaging manner.

Water Resources Science and Management Option (M.S.)

Master of Science. Major in Water Resources - Science and Management Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas. The common courses are:

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	2
Select one 500-level Elective Course ¹		3
Total Hours		6-21

1

(Or 900-level in LAW) in an option area outside the main option area (3 cr for Ph.D. only).

Entry Requirements

Coursework in the following is required for (M.S. and Ph.D.) admission to the Water Resources Science & Management Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (6 credits)
- Statistics (3 credits)
- Chemistry or Physics or Biology/Ecology (6 credits total)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 credits):

Code	Title	Hours
Aquatic Ecology		
FISH 503	Workshop	1-16
Fluvial Geomorphology and Aquatic Habitat		
CE 526	Aquatic Habitat Modeling (Max 6 credits)	3
CE 535	Fluvial Geomorphology and River Mechanics	3
Physical Hydrogeology		
BE 450	Environmental Hydrology ¹	3
FISH 515	Large River Fisheries ¹	2
Statistics		
ENVS 541	Sampling and Analysis of Environmental Contaminants	3
STAT 431	Statistical Analysis	3
Subsurface Hydrology		
HYDR 509	Quantitative Hydrogeology ²	3
SOIL 515	Soil and Environmental Physics ²	3
Water Quality		

1

Either BE 450 or FISH 515 may be used to satisfy this requirement, but not both.

2

Either HYDR 509 or SOIL 515 may be used to satisfy this requirement, but not both.

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Engineering & Science or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

1. Students will understand the diverse philosophical bases of different disciplines and work effectively in interdisciplinary teams to solve complex interdisciplinary water resources challenges.
2. Students will gain knowledge of fundamental scientific theories and concepts within their sub-field of water resources and application to management challenges.
3. Students develop the breadth and depth of disciplinary understanding and critical thinking to contribute to the design, data collection, and analysis of an original water resources research project.
4. Student will develop written and oral communication skills to engage professional peers in a concise, factually accurate, mechanically correct, and engaging manner.

Water Resources Science and Management Option (Ph.D.)

Doctor of Philosophy. Major in Water Resources - Science and Management Option.

Common Courses

Students in both M.S. and Ph.D. degree programs are required to fulfill a set of common courses, applicable to all three Water Resources Option Areas.

Code	Title	Hours
WR 501	Seminar	1-16
WR 506	Interdisciplinary Methods in Water Resources	2
Select one 500-level Elective Course ¹		3
Total Hours		6-21

1

(Or 900-level in LAW) in an option area outside the main option area (3 cr for Ph.D. only).

Entry Requirements

Coursework in the following is required for (M.S. and Ph.D.) admission to the Water Resources Science & Management Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (6 credits)
- Statistics (3 credits)
- Chemistry or Physics or Biology/Ecology (6 credits total)

Core Courses

M.S. students are required to take 6 credits, and Ph.D. students are required to take 9 credits from the following (6 or 9 credits):

Code	Title	Hours
Aquatic Ecology		
FISH 503	Workshop	1-16
Fluvial Geomorphology and Aquatic Habitat		
CE 526	Aquatic Habitat Modeling (Max 6 credits)	3
CE 535	Fluvial Geomorphology and River Mechanics	3
Physical Hydrogeology		
BE 450	Environmental Hydrology ¹	3
FISH 515	Large River Fisheries ¹	2
Statistics		
ENVS 541	Sampling and Analysis of Environmental Contaminants	3
STAT 431	Statistical Analysis	3
Subsurface Hydrology		
HYDR 509	Quantitative Hydrogeology ²	3
SOIL 515	Soil and Environmental Physics ²	3
Water Quality		

1

Either BE 450 or FISH 515 may be used to satisfy this requirement, but not both.

2

Either HYDR 509 or SOIL 515 may be used to satisfy this requirement, but not both.

Elective Courses

As noted under Common Courses for Ph.D. only, an elective course *must* be in either the Engineering & Science or Law, Management & Policy Option Areas. A core course may be considered an elective course once the core requirements are satisfied. A detailed list of elective courses for this option area is provided on the Water Resources Program web site.

1. Students will understand the diverse philosophical bases of different disciplines and work effectively in interdisciplinary teams to solve complex interdisciplinary water resources challenges.
2. Students will gain knowledge of fundamental scientific theories and concepts within their sub-field of water resources and application to management challenges.
3. Students will independently synthesize key knowledge gaps to conceptualize, develop, and implement a novel disciplinary and/or interdisciplinary water resources research project.
4. Students will develop written and oral communication skills to engage professional peers and the public in a concise, factually accurate, mechanically correct, and engaging manner.

College of Art and Architecture

Sauna Corry, Dean (AA 202 83844-2461; 208-885-5423).

The College of Art and Architecture was re-established in October 2005, by mandate of the State Board of Education, to bring together the accredited programs in art and design, architecture, landscape architecture, interior design, and virtual technology and design. All majors will be engaged in professionally accredited, studio-based programs through inspired teaching and individual attention, developing in each student their unique qualities and qualifications for success. The students will also be connected with communities and other "clients" to gain immediate experience addressing real-world problems, experience the rewards of making a difference, and be inspired to thrive in a world of change by being creative, collaborative leaders, within and outside their disciplines.

This combination of strong, accredited programs increases the resources available to students and brings together a community of scholars with a common dedication to a sustainable, high quality physical environment. Additionally, this relationship promotes opportunities for integration and prepares students for the interdisciplinary nature of contemporary practice. The quality of these programs has earned the college an excellent and widespread reputation.

Aptitudes

Students likely to succeed in the design and visual arts are those with a serious purpose and willingness to work hard. Equally important is the ability to visualize in three dimensions. Students need to be creative, inquisitive, and be able to effectively communicate both visually and verbally. Students should also value cultural and social diversity and be willing to learn in an interdisciplinary and cooperative manner. Some of the programs also require an ability and interest in the natural sciences and math.

Faculty

Faculty are key to the quality of the educational experience obtained through college programs. Combining the energies of a well recognized, scholarly, and creative faculty with the innovative talents of experienced architects, artists, designers, and landscape architects, the college develops the skills of future professionals by preserving the balance between the theoretical and practical aspects in each of the programs represented. Within the design profession, focus is placed on the application of contemporary design issues with an emphasis on environmental responsibility and the role of history and culture in meeting the diverse needs of a global society.

Facilities

The College of Art and Architecture is housed in several buildings located in the very center of the university campus. These buildings are in close proximity to university classroom buildings, library, administrative offices, and recreational facilities. The Ridenbaugh Hall Gallery on campus and the Prichard Gallery in downtown Moscow are administered by the college and provide support to all college disciplines. There are also two facilities located in Boise: The Idaho Urban Research and Design Center (IURDC) and the Integrated Design Lab (IDL).

Fees

The State Board of Education has granted approval to charge a professional fee to all College of Art and Architecture students on a

semester basis over and above general tuition and fees. This fee is used to directly support technology and computing for students and faculty, supplement operating budgets, hire temporary faculty, support the college's visual and design resource centers, cover professional accreditation costs, and partially support student field trips, clubs, and guest lecturers. See "Fees and Expenses (p. 57)" of this catalog.

Preparation and Admission

A statement of undergraduate and graduate admission requirements is included in this catalog. Students who contemplate entering the College of Art and Architecture with advanced standing from a junior college or other institution should complete as many of the first year and sophomore requirements listed in the curricula as possible. Certain courses are prerequisites to many advanced courses, and their omission will delay graduation. Certain grade-point averages and other conditions are required for entering into particular programs in the college. See the preface to each curriculum.

Scholarships and Awards

Scholarships and awards are available to students and prospective students. See Student Financial Aid Services (<http://www.uidaho.edu/financialaid/>).

Visit the College of Art and Architecture (<http://www.uidaho.edu/caa/>) website or contact specific program administrators for more information.

University Requirements: See Regulation J (p. 78) for the all-university requirements for graduation.

College Requirements: See specific degree requirements within each program.

Upon registering for any course offered in this college, the student agrees that the program offering the course may retain work completed by the student. The program will make retained work available to the student for photographing.

Programs

There are six programs within the College of Art and Architecture:

- Architecture,
- Interior Architecture and Design,
- Art and Design,
- Landscape Architecture,
- Virtual Technology and Design and
- Bioregional Planning and Community Design.

Each program represents unique disciplines that are integrated throughout their curriculum, research and service mission.

Graduate Programs

Please refer to the specific programs.

Department of Architecture

Overview Pending

Majors

- Architecture (B.S.Arch.) (p. 159)

Minors

- Architecture Minor (p. 161)

Architecture Graduate Program

- Architecture (M.Arch.) (p. 160)
- Integrated Architecture and Design (M.S.) (p. 161)

Architecture (B.S.Arch)

Architecture Undergraduate Curricular Requirements

The four-year curriculum leading to a B.S.Arch. degree provides the undergraduate, pre-professional coursework that qualifies students for entry level architectural work and prepares them to pursue the NAAB accredited, professional M.Arch. degree via the seamless degree path.

Admission to the B.S.Arch. program is competitive. Students apply to the program after the first year of study, where academic achievement is reviewed to determine eligibility for continued study in architecture. Another application occurs at the end of the second year of study. Here, applicants to the third year are required to submit a portfolio containing examples of graphic work in art and architecture. The deadline for both second and third year applications is mid-May, with the results of the evaluation being made known to applicants by the first week of July.

Students accepted into the years three and four of the curriculum are required to maintain a minimum 3.0 GPA and to receive a grade of 'C' or higher in architectural design studios. Students who do not meet these criteria are ineligible for acceptance to the M.Arch. degree program and the College of Graduate Studies. (Provisional admittance to the M. Arch. program can be granted, with permission, for students with GPAs of 2.8 cumulatively, or 3.0 over the last 60 credit hours. See below for M.Arch. degree requirements.)

Note: Program permission is required for admittance into architecture design studios (ARCH 253, ARCH 254, ARCH 353, ARCH 354, and ARCH 454) and students must achieve a minimum grade of 'C' in the previous studio course to enroll in the next sequential studio course.

Note: Students who have not been accepted into the third year curriculum may not enroll in architectural design courses. Students who have left the program may only re-enter the curriculum by application to the college admissions committee.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
ARCH 151	Introduction to the Built Environment	3
ARCH 154	Introduction to Architectural Graphics	3
ARCH 243	Media in Architecture	3
ARCH 253	Architectural Design I	4
ARCH 254	Architectural Design II	4
ARCH 266	Materials and Methods	3
ARCH 353	Architectural Design III	6
ARCH 354	Architectural Design IV	6
ARCH 361	Structural Systems I	3
ARCH 362	Structural Systems II	3
ARCH 385	Global History of Architecture	3

ARCH 386	Global History of Architecture II	3
ARCH 388	Architectural Theory	3
ARCH 454 & 454	Architectural Design: Vertical Studio and Architectural Design: Vertical Studio (Must be taken twice for credit)	12
ARCH 461	Building Assemblies	3
ARCH 463	Environmental Control Systems I	3
ARCH 463L	Environmental Control System I Lab	1
ARCH 464	Environmental Control Systems II	3
ARCH 464L	Environmental Control System II Lab	1
ARCH 483	Urban Theory and Issues	3
ART 100	Introduction to Art: Why Art Matters	3
ART 121	Integrated Design Process	3
MATH 143	College Algebra	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
3 credits of 200-level or above courses from outside ARCH, LARC, ART, IAD, or VTD ¹		3
3 credits of 200-level or above courses from within ARCH, LARC, ART, IAD, or VTD ¹		3
6 elective credits from any discipline ¹		6
Total Hours		98

¹

Credits earned in completion of an academic minor may be substituted.

Courses to total 123 credits for this degree

Fall Term 1		Hours
ARCH 151	Introduction to the Built Environment	3
ART 111	Drawing I	3
ART 121	Integrated Design Process	3
ENGL 101	Writing and Rhetoric I	3
COMM 101	Fundamentals of Oral Communication	3
Hours		15
Spring Term 1		Hours
ARCH 154	Introduction to Architectural Graphics	3
ART 100	Introduction to Art: Why Art Matters	3
ENGL 102	Writing and Rhetoric II	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Fall Term 2		Hours
ARCH 253	Architectural Design I	4
ARCH 266	Materials and Methods	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Social and Behavioral Ways of Knowing Course		3
Hours		14
Spring Term 2		Hours
ARCH 254	Architectural Design II	4
ARCH 243	Media in Architecture	3
200-level or higher Non Art & Architecture Course		3
Social and Behavioral Ways of Knowing Course		3
American Diversity Course		3
Hours		16
Fall Term 3		Hours
ARCH 353	Architectural Design III	6
ARCH 361	Structural Systems I	3

ARCH 483	Urban Theory and Issues	3
ARCH 385	Global History of Architecture	3
Hours		15
Spring Term 3		
ARCH 354	Architectural Design IV	6
ARCH 362	Structural Systems II	3
ARCH 386	Global History of Architecture II	3
ARCH 388	Architectural Theory	3
Hours		15
Fall Term 4		
ARCH 454	Architectural Design: Vertical Studio	6
ARCH 463	Environmental Control Systems I	3
ARCH 463L	Environmental Control System I Lab	1
200-level or higher Art & Architecture Course		3
200-level or higher Elective Course		3
Hours		16
Spring Term 4		
ARCH 454	Architectural Design: Vertical Studio	6
ARCH 461	Building Assemblies	3
ARCH 464	Environmental Control Systems II	3
ARCH 464L	Environmental Control System II Lab	1
Elective		3
Hours		16
Total Hours		123

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students completing each of the architectural history courses will demonstrate a working thorough knowledge of global architectural history and an understanding of its importance, through written papers and examinations and in its application to design.
2. Students completing their fourth year of design studio will demonstrate critical thinking skills, considering diverse points of view to make informed decisions with respect to built environments.
3. Students completing their fourth year of design studio will demonstrate effective graphic communication skills, including architectural drawings, analytical diagrams, information graphics, and physical and digital models.
4. Students completing the environmental control systems sequence of courses will demonstrate a working knowledge of these systems as applied to architectural projects.
5. Students completing the structures sequence of courses will demonstrate a working knowledge of structural systems as applied to architectural projects.

Architecture (M.Arch.) Master of Architecture. Major in Architecture

Candidates must fulfill the requirements of the College of Graduate Studies (p. 292) and the Architecture (p. 158) program. 36 of the 45 credits required for this degree must be at the 500-level architecture courses, including the following courses: ARCH 510 (3 credits), ARCH 553 (6 credits), ARCH 554 (6 credits), ARCH 556 (6 credits),

ARCH 568 (3 credits), ARCH 575 (3 credits), and 9 credits of 500-level architecture electives. The remaining nine credits required to complete this degree may be 400- or 500-level architecture courses or 300- or 400-level courses in supporting areas.

Equivalents must be approved by the graduate program coordinator. Graduate students without an undergraduate architecture degree may also earn an accredited M.Arch. degree. Those students are placed in the program according to their academic qualifications, and depending on the background of the applicant, up to six years of study may be required to complete the degree requirements. Candidates must fulfill the requirements of the College of Graduate Studies (p. 292) and the Architecture (p. 158) program. Master of Architecture degree requirements are listed below.

Required courses include:

Code	Title	Hours
ARCH 510	Graduate Project Seminar	3
ARCH 553	Integrated Architectural Design	6
ARCH 554	Architectural Design: Vertical Studio	6
ARCH 556	Graduate Project	6
ARCH 568	Technical Integration in Design	3
ARCH 575	Professional Practice	3
Select Graduate Architecture Electives from the following:		9
ARCH 502	Directed Study	
ARCH 504	Special Topics	
ARCH 511	Native American Architecture	
ARCH 514	Introduction to Graduate Architecture Research	
ARCH 516	Social Sustainability in Contemporary Cities	
ARCH 520	Architectural Research Methods (Social Sustainability in Contemporary Cities)	
ARCH 521	China Program Preparation Seminar	
ARCH 522	China's Urbanization Seminar	
ARCH 523	Cultural & Ethical Issues in Global Architectural Practice	
ARCH 552	Alternate Graduate Design Experience	
ARCH 570	Natural Lighting	
ARCH 571	Building Performance Evaluation	
ARCH 574	Building Performance Simulation for Integrated Design	
ARCH 580	British Green Architecture	
ARCH 599	Non-thesis Master's Research (Social Sustainability in Contemporary Cities)	
Select 9 credits from 400/500 Architecture courses or 300/400 supporting courses		9
Total Hours		45

1. Students completing the graduate project seminar will demonstrate the ability to apply architectural theory to their design research and process and will be able clearly explain the theoretical basis or bases of their design solutions.
2. Students completing the graduate project studio will demonstrate advanced graphic communication skills, including architectural drawings, analytical diagrams, information graphics, and physical and digital models.

- Students completing the comprehensive studio will demonstrate effective design synthesis skills, including the integration of material, structural, environmental control, and other building systems.
- Students completing the professional practice course will demonstrate a thorough understanding of ethical standards, civic outreach, legal issues, and economic issues as they relate to the profession.
- Students completing the Graduate Project Seminar will demonstrate advanced skills for research and critical thinking as it informs design problem analysis and definition.

Architecture Minor

Code	Title	Hours
ARCH 151	Introduction to the Built Environment	3
ARCH 385	Global History of Architecture	3
ARCH 386	Global History of Architecture II	3
Select 10 credits from the following:		10
ARCH 154	Introduction to Architectural Graphics	
ARCH 253	Architectural Design I	
ARCH 254	Architectural Design II	
ARCH 266	Materials and Methods	
ARCH 388	Architectural Theory	
ARCH 463	Environmental Control Systems I	
ARCH 464	Environmental Control Systems II	
ARCH 483	Urban Theory and Issues	
Total Hours		19

Courses to total 19 credits for this minor

Integrated Architecture and Design (M.S.)

Master of Science. Major in Integrated Architecture and Design.

The Master of Science offers a research program open to candidates who hold a non-professional degree in any design discipline and/or a professional degree in architecture or landscape architecture, or other degree holders who desire to embark on a career in consulting, research, and/or scholarship. The program is designed for independent study within one or more of the following areas of specialization: Visualization, Environment and Behavior, Urban Design, Community Design and Planning, Universal Design, Landscape Design, Media Design, and Sustainable Architecture and Planning. Graduate students work closely with their major professor and graduate committee to develop a detailed program of study that borrows from three disciplines within the College of Art and Architecture as well as studies with other programs throughout the university. Acceptance into the program is contingent on the Graduate Committee's review of the candidate's statement of intent describing the area of specialization in which the candidate will focus, three letters of recommendation, and a portfolio. The Graduate School requires a completed application, university transcripts, a resume, and an official TOEFL score (when appropriate). Prospective students are encouraged to first correspond with the Chair of the MSIAD Committee about their interests. The chair will then direct the applicant to further sources if needed. The M.S. degree with a major in Integrated

Architecture and Design requires the completion of 30 credits of course work in either a thesis or non-thesis (project-based) option.

Thesis option:

Code	Title	Hours
ARCH 500	Master's Research and Thesis	1
ARCH 520	Architectural Research Methods	3
Select 12 credits in Graduate Seminars in three disciplines ¹		12
Select 5-7 credits of electives		5-7
Total Hours		21-23

1

Students must have at least 1 seminar in the CAA and at least one seminar from outside the college.

Non-thesis option:

Code	Title	Hours
Select 12 credits of graduate design research as approved by major professor		12
Select 12 credits in Graduate Seminars in three disciplines ¹		12
Select 6 credits of electives		6
Total Hours		30

1

Students must have at least 1 seminar in the CAA and at least one seminar from outside the college.

- Students should demonstrate the ability to creatively combine and utilize established disciplinary concepts and modes of practice into a specialized area of architectural and/or other design practices while engaging current issues in the disciplines informing their thesis or project.
- Students should demonstrate an ability to conceive and produce designed objects, spaces, or writings that are speculative and propositional that integrate and synthesize interdisciplinary information relating to specific specialization within the various design fields (including architecture).
- Students should exhibit the ability to work creatively and collaboratively across disciplines using appropriate research methods or design methodologies to clearly identify, address, and communicate the social, environmental, cultural, and economic challenges posed by designed objects and/or the natural and built environments.

Department of Art & Design

Overview Pending

Majors

- Art (B.A.) (p. 162)
- Studio Art and Design (B.F.A.) (p. 163)

Minors

- Art Minor (p. 163)

Graduate Program

- Art (M.F.A.) (p. 163)

Art Core

Code	Title	Hours
ART 100	Introduction to Art: Why Art Matters	3
ART 111	Drawing I	3
ART 112	Drawing II	3
ART 121	Integrated Design Process	3
ART 122	Art & Design Process	3
Total Hours		15

Art (B.A.)

Computer Equipment

Beginning with the first year of the program, all art and design students are required to have their own laptop computer and appropriate software for use in their courses. Please refer to the College of Art and Architecture's (<http://www.uidaho.edu/caa/>) website for specifics.

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general requirements for the B.A. degree, the art core, and a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in one of the following areas: ceramics, graphic design, interaction design, painting, sculpture, printmaking, or photography/digital imaging and:

Code	Title	Hours
Art Core (p. 162)		15
Major Requirements		44-47
Total Hours		59-62

Major Requirements

Code	Title	Hours
ART 205	Visual Culture	3
ART 407	New Media	3
ART 410	Professional Practices	2
Select 6 credits from the following Art History Electives with advisor approval: ³ credits should be 300 level or higher		6

ART 213	History and Theory of Modern Design	
ART 217	Ancient & Pre-Modern Art	
ART 302	Modern Art and Theory	
ART 303	Contemporary Art and Theory	
ART 323	History of Typography	
ART 409	Visual Studies	

Select 15-18 credits from the following 200-level studio courses: ¹ 15-18

ART 211	Life Drawing	
ART 216	Digital Tools	
ART 221	Introduction to Graphic Design	
ART 222	Introduction to Typography	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Introduction to Interaction Design	
ART 272	Introduction to Experiential Design	
ART 280	Understanding Photography	

Select 15 credits from the following studio courses: ² 15

ART 321	Graphic Design: Concepts (Max 6 credits)	
ART 322	Graphic Design: Studio (Max 6 credits)	
ART 330	Intermediate/Advanced Painting (Max 12 credits)	
ART 340	Intermediate/Advanced Sculpture (Max 9 credits)	
ART 350	Intermediate/Advanced Printmaking (Max 12 credits)	
ART 360	Intermediate/Advanced Ceramics (Max 9 credits)	
ART 370	Interaction/Experiential Design: Concepts (Max 9 credits)	
ART 373	Interaction/Experiential Design: Studio	
ART 380	Digital Imaging	
ART 404	Special Topics	
ART 488	Faculty Directed Internship	

Total Hours 44-47

Courses to total 120 credits for this degree

1

Students pursuing a studio emphasis in graphic design must include ART 222 Introduction to Typography; and interaction design majors must include ART 272 Introduction to Experiential Design.

2

At least 6 credits must be taken in one studio area for Studio Emphasis, i.e., ART 330 Intermediate/Advanced Painting; no more than 6 credits in one studio area may be counted toward this requirement.

Fall Term 1	Hours
ART 111 Drawing I	3
ART 121 Integrated Design Process	3
ENGL 101 Writing and Rhetoric I	3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101	4
Mathematical Ways of Knowing Course	3
Hours	16

Spring Term 1

ART 100 Introduction to Art: Why Art Matters	3
ART 112 Drawing II	3
ART 122 Art & Design Process	3
ENGL 102 Writing and Rhetoric II	3
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102	
Hours	12

Fall Term 2

ART 205 Visual Culture	3
200-level Studio	3
200-level Studio	3
200-level Studio	3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4
Hours	16

Spring Term 2

COMM 101 Fundamentals of Oral Communication	3
200-level Studio	3
200-level Studio	3
Scientific Ways of Knowing Course	4
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Hours	17

Fall Term 3

300-level Studio	3
300-level Studio	3
Art History Elective	3

Social and Behavioral Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course (Non-Art)		3
Hours		15
Spring Term 3		
300-level Studio		3
300-level Studio		3
Scientific Ways of Knowing Course		4
Social and Behavioral Ways of Knowing Course		3
Elective Course		1
Hours		14
Fall Term 4		
ART 407	New Media	3
300-level Studio		3
Social and Behavioral Ways of Knowing Course		3
Upper Division Elective		3
Upper Division Elective		3
Hours		15
Spring Term 4		
ART 410	Professional Practices	2
Art History Elective		3
Upper Division Elective		3
Upper Division Elective		3
Hours		11
Total Hours		116

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students graduating with a general B.A. Art degree will acquire and demonstrate the ability to place works of art and design in historical, cultural, and stylistic contexts and to analyze them perceptively.
2. The B.A. Art graduate will acquire and demonstrate functional competence with principles of visual organization (design principles), including the ability to work with visual elements in two and three dimensions; color theory and its applications; and drawing along with appropriate media and formats for the various art and design disciplines.
3. Graduates of the B.A. Art degree should acquire and possess the ability to think, speak, and write clearly and effectively, and to communicate with precision, cogency, and rhetorical force.
4. All B.A. Art graduates will function and speak at an intermediate level in a foreign language. Students should exhibit appreciation of a foreign culture, in particular the visual and material culture products including films and designed objects.

Art (M.F.A.) Master of Fine Arts. Major in Art.

The Master of Fine Arts degree is a 60-credit degree designed for students wishing to prepare themselves for a career as a professional artist or art teacher at the college or university level.

The M.F.A. is the terminal degree in studio art and requires a thesis. The major portion of the student's thesis consists of a one-person exhibition of professional quality work supported by a written statement on the nature of the work. The statement includes an explanation of the

evolution of the conceptual or theoretical basis for the work (including historical and contemporary examples and influences), and a discussion of the experiments, processes, and technical experiments that were used in the evolution of the work.

Areas of concentration are painting, drawing, sculpture, ceramics, graphic design, printmaking, and interface design, or a direction may be developed that combines two or more of these areas. Students wishing to work in an area other than those listed above must clearly state their intention in their statement of goals or intent upon application for admission to the M.F.A. program.

A final oral examination is required (and may be supplemented with a written examination at the discretion of the graduate committee).

1. Students should create a body of work that somehow expands their creative practice and showcases their understanding of current issues and developments in their chosen field or emphasis.
2. Graduate students should acquire and demonstrate the ability to use analytical tools, design processes, technologies, and bibliographical resources to develop concepts, reveal patterns of information, and create rationales for specific design solutions that can be communicated clearly in speech and writing to the public and various professional communities.
3. M.F.A. graduates should acquire and demonstrate the ability to integrate and synthesize information associated with an area of specialization, including the ability to reach and articulate conclusions as an individual artist or designer in work that is speculative and propositional; for example, what art and design can achieve or address economically, socially, culturally, and technologically.

Art Minor

Code	Title	Hours
ART 100	Introduction to Art: Why Art Matters	3
ART 111	Drawing I	3
ART 121	Integrated Design Process	3
Select one of the following:		3
ART 112	Drawing II	
ART 122	Art & Design Process	
Select 200 and 300 level Art Studio and/or Art History courses:		6
Total Hours		18

Courses to total 18 credits for this minor

Art courses used to meet the Art Minor cannot be taken under the Pass/Fail option.

Studio Art and Design (B.F.A.)

The B.F.A. is a four-year degree divided into two parts: the preprofessional program (freshman and sophomore years) and the professional program (junior and senior years). Majors are eligible to apply for the professional program when they have completed the art core, are in the process of completing the 200-level art course requirements, and have earned a minimum 2.75 GPA. Applications for the professional BFA program will be requested each semester; students must be admitted to the professional BFA through the review process *before being admitted to ART 490 and*

ART 495. Transcripts and a portfolio of the student's art work must accompany the application. Students accepted into the professional program must complete 15 credits of 300-level studio courses with at least 6 of the 15 credits in one sequential studio area and 12 credits of art history before enrolling in ART 490 and ART 495. Students must maintain a minimum GPA of 2.75 and receive a grade of 'C' or better in the 300- and 400-level art courses. Students may reapply for entry into the professional program any semester after their sophomore year.

Computer Equipment: Beginning with the first year of the program, all art and design students are required to have their own laptop computer and appropriate software for use in their courses. Please refer to the College of Art and Architecture's (<http://www.uidaho.edu/caa/>) website for specifics.

Required coursework includes the university requirements (see regulation J-3 (p.)); the art core; and a studio emphasis (all the 200-level and 300-level courses in a specific studio area) in graphic design, interaction design, painting, sculpture, printmaking, or photography/digital imaging; and:

Code	Title	Hours
Art Core (p. 162)		15
Major Requirements		59
Total Hours		74

Major Requirements

Code	Title	Hours
ART 205	Visual Culture	3
ART 407	New Media	3
ART 410	Professional Practices	2
ART 490	BFA Art/Design Studio (12 credits required)	12
ART 495	Critical Art Writing Seminar	3
<i>Select 6 credits of Art History Electives with advisor approval:</i>		6
ART 213	History and Theory of Modern Design	
ART 217	Ancient & Pre-Modern Art	
ART 302	Modern Art and Theory	
ART 303	Contemporary Art and Theory	
ART 323	History of Typography	
ART 409	Visual Studies	
HIST 454	Pictures and Power: Photography, Politics, and American History	
<i>Select 15 credits from the following 200-level Studio courses:</i>		15
ART 211	Life Drawing	
ART 216	Digital Tools	
ART 221	Introduction to Graphic Design	
ART 222	Introduction to Typography	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Introduction to Interaction Design	
ART 272	Introduction to Experiential Design	
ART 280	Understanding Photography	
<i>Select 15 credits from 300-400 level Studio courses:</i> ¹		15
ART 321	Graphic Design: Concepts	

ART 322	Graphic Design: Studio
ART 330	Intermediate/Advanced Painting
ART 340	Intermediate/Advanced Sculpture
ART 350	Intermediate/Advanced Printmaking
ART 360	Intermediate/Advanced Ceramics
ART 370	Interaction/Experiential Design: Concepts
ART 373	Interaction/Experiential Design: Studio
ART 380	Digital Imaging
ART 404	Special Topics
ART 488	Faculty Directed Internship

Total Hours **59**

Courses to total 120 credits for this degree

1

At least 6 credits must be taken in one studio area for a Studio Emphasis, i.e., ART 330; no more than 6 credits in one studio area may be counted toward this requirement.

No more than a combined total of 9 credits of the following courses may be applied toward a B.F.A. degree: ART 404, ART 488, ART 497, ART 498, and ART 499.

Fall Term 1	Hours
ART 100 Introduction to Art: Why Art Matters	3
ART 111 Drawing I	3
ART 121 Integrated Design Process	3
ENGL 101 Writing and Rhetoric I	3
Mathematical Ways of Knowing Course	3
Hours	15
Spring Term 1	Hours
ART 112 Drawing II	3
ART 122 Art & Design Process	3
ENGL 102 Writing and Rhetoric II	3
COMM 101 Fundamentals of Oral Communication	3
Scientific Ways of Knowing Course	4
Hours	16
Fall Term 2	Hours
ART 205 Visual Culture	3
200-Level Studio	3
200-Level Studio	3
200-Level Studio	3
Social and Behavioral Ways of Knowing Course	3
Hours	15
Spring Term 2	Hours
200-Level Studio	3
200-Level Studio	3
Art History Elective	3
Humanistic and Artistic Ways of Knowing Course (Non-Art)	3
Scientific Ways of Knowing Course	4
Hours	16
Fall Term 3	Hours
300-Level Studio	3
300-Level Studio	3
300-Level Studio	3
Art History Elective	3
Social and Behavioral Ways of Knowing Course	3
Hours	15
Spring Term 3	Hours
300-Level Studio	3

300-Level Studio	3	
American Diversity Course	3	
Upper Division Elective	3	
Upper Division Elective	2	
Hours	14	
Fall Term 4		
ART 407	New Media	3
ART 490	BFA Art/Design Studio	6
ART 495	Critical Art Writing Seminar	3
Upper Division Elective		3
Hours	15	
Spring Term 4		
ART 410	Professional Practices	2
ART 490	BFA Art/Design Studio	6
Upper Division Elective		3
Upper Division Elective		3
Hours	14	
Total Hours	120	

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1. Students should acquire and possess the ability to think, speak, and write clearly and effectively, and to communicate with precision, cogency, and rhetorical force.
2. Students should acquire and demonstrate technical mastery, capability to produce work and solve professional problems independently, and a coherent set of artistic/intellectual goals that are evident in the work.
3. Students should demonstrate a broad working knowledge of various aesthetic issues, processes, and media and their relationship to the conceptualization, development, and completion of works of art and design within various specializations.
4. Students should demonstrate competence by conceiving and creating a body of work for evaluation in a major area of study using design principles and technical skills to support work in the student's particular specialization.

Department of Design and Environments

The Department of Design and Environments is composed of three program areas: 1) Interior Architecture and Design, 2) Landscape Architecture, and 3) Virtual Technology and Design. The programs are central to the mission and priorities of the university with emphasis on providing innovative thinking, community engagement, and transformative education. With hands-on studio programming, students become adept at problem solving through the design process.

The department supports the university's vision through expanding the institution's reach and capacity for economic impact and accessibility to qualified students of all backgrounds. The department is also integral to the College of Art and Architecture's Vision and Mission:

Vision

The College of Art and Architecture strives to empower the next generation of artists and designers to positively impact a rapidly changing world and one of the fastest growing states in the nation. We design with communities and industry partners, we conduct hands-on research, and we infuse our work with empathy, storytelling, placemaking and the utmost creativity.

Mission

Delivering on the university's land-grant mission, the College of Art and Architecture contributes to the well-being of statewide and global communities through innovative design education that safeguards sustainability, economic resiliency, cultural vibrancy and the common good. Our faculty and graduates' leading-edge work emerges from an arts foundation and strong commitment to design integration – and results in built, cultural, natural, and virtual environments that enrich our communities and our world.

The department continues the statewide mission of two of the three program areas to positively impact communities through service-learning/community outreach projects focusing on enhancing life quality through design: it prepares undergraduate and graduate students poised to enter a thriving and competitive creative economy, and the interior architecture and design, landscape architecture, and virtual technology and design job markets.

Faculty are an integral part of student preparation, offering rigorous discipline specific instruction and expertise in creative problem solving and "making" in design studios, virtual laboratories, and the classroom, developing transformative "real-world" learning experiences for students, and engaging in research focused on: environment and behavioral considerations of the built environment; the health, welfare, and safety of building and landscape users; the importance of interior and exterior materials; issues of sustainability; social consciousness; the power of rapidly changing technologies and human interface; scientific data modeling; and innovative AI design.

Students are supported by faculty in developing required skills delivered through two professional curriculums and an evolving one. Students will participate in small- and large-scale research projects, service-learning opportunities, and entrepreneurial endeavors.

The programs within the Department of Design and Environments offer three undergraduate degrees and one graduate degree with a total of approximately 260 students majoring in programs within the department. They have national accreditations from: 1) the Council for Interior Design Accreditation (CIDA), 2) the Landscape Architecture Accrediting Board (LAAB), and 3) the National Association of Schools of Art and Design (NASAD). The programs in the Department of Design and Environments also instruct students outside of the department (students completing minors) and offers some general education coursework in the International, American Diversity, and Approved Senior Experience categories.

Degrees, Minors and Certificates within the Department

- Bachelor of Interior Architecture and Design (B.I.A.D, CIDA accredited—the primary professional accreditation for the program—and is included in the institutional NASAD accreditation)
- Interior Architecture and Design Minor (18 credits)
- Bachelor of Science in Environmental Design (B.S.E.D.)

- Master of Landscape Architecture (M.L.A, LAAB accredited degree)
- Landscape Architecture Minor (18 credits)
- Bachelor of Science in Virtual Technology and Design (B.S.V.T.D., included in the institutional NASAD accreditation)
- Virtual Technologies Undergraduate Academic Certificate (12 credits)

The Interior Architecture and Design Program (IAD) has statewide responsibility for Interior Design education. Students learn to enhance life quality for all people through innovative, environmentally responsive, socially conscious, and culturally relevant design rooted in structural, scientific, architectural and design principles. Students learn to design interiors that protect the health, safety, and welfare of occupants, and work with real-world partners to develop design solutions addressing critical needs and problems. One hundred percent of IAD students participate in community engagement and service-learning projects, which translates to first-hand knowledge: tools and experience highly sought after in the workplace. The program offers the first two years of the degree at the U of I Boise Center, and students also can complete a seamless B.I.A.D./M.Arch degree as well.

The University of Idaho Landscape Architecture program draws students from around the world to study in one of the most diverse bioregions in the nation. Design studios present real-world projects where students and faculty work with community members to develop integrated design solutions that preserve and enhance rural and urban landscapes throughout Idaho and beyond. The program has statewide responsibility for landscape architecture education, and both undergraduate and graduate students are sought after in both the Intermountain West and Pacific Northwest regions by leaders in the landscape industry.

Virtual Technology and Design (VTD) graduates can apply their skills to a wide range of sectoral activities. In addition to a deep knowledge of digital tools and virtual technologies, VTD graduates are well trained to design and create applications for real life problems. The VTD program has been successful at teaching project management and leadership skills to students who will be involved in company projects in relationship to innovation, growth, and new business models. Graduates are storytellers capable of using the spectrum of digital media from flat to three dimensional models as well as immersive environments.

VTD graduates working at digital studios and large companies often create working demos and prototypes to communicate and present ideas and concepts. The content of products graduates develop range from education about safety, sustainable solutions to learn about environmental issues, apps and games for studios, gaming companies, or entertainment. Their work can be found in virtual reality, animation studios, video gaming, or internet companies. They have developed digital twins for simulation and training in the aerospace, maritime, and energy utility sectors. Students are sought after in urban areas located in the Western states.

Majors

- Interior Architecture and Design (B.I.A.D.) (p. 167)
- Environmental Design (B.S.E.D.) (p. 166)
- Virtual Technology and Design (B.S.) (p. 170)

Minors

- Interior Architecture and Design Minor (p. 169)
- Landscape Architecture Minor (p. 170)

Certificates

- Virtual Technologies Undergraduate Certificate (p. 170)

Design and Environments Graduate Program

- Landscape Architecture (M.L.A.) (p. 169)

Environmental Design (B.S.E.D.)

Students are typically accepted into the B.S. Environmental Design as freshman or as transfer students. All students in the program must maintain at least a 2.5 cumulative GPA in landscape architecture courses. Failure to do so will require the student to meet with their advisor and repeat the landscape architecture courses that impact this overall GPA before advancing in the program. On registering for a course offered by the program, the student agrees that the college may retain work completed by the student for display, instruction, and accreditation purposes.

Computer Equipment: Beginning with the first year of the program, all B.S. Environmental Design students are required to have their own laptop computer and appropriate software for use in their courses.

Required course work includes the University General Education requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
LARC 150	Landscape, Culture and the Environment	3
ARCH 151	Introduction to the Built Environment	3
ART 121	Integrated Design Process	3
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
MATH 143 or STAT 251	College Algebra Statistical Methods	3
GEOL 101	Physical Geology	3
GEOL 101L	Physical Geology Lab	1
LARC 210	Landscape Architecture Representation and Media 2	3
FOR 221 or NR 321	Principles of Ecology Ecology	3
LARC 251	Introduction to Principles of Site Design	3
LARC 252	Landscape Architecture Design Foundations Studio	6
LARC 253	Landscape Architecture Design Process Studio	6
LARC 288	Plant Materials & Design 1	3
LARC 340	Grading, Drainage, and Stormwater Management	4
LARC 341	Construction Materials, Detailing, and Documentation	4
LARC 353	Landscape Architecture Studio 1	3
LARC 355	Landscape Architecture Studio 2	3
LARC 358	Professional Practice	2
LARC 363	Landscape Architecture Studio 3	3
LARC 365	Landscape Architecture Studio 4	3

LARC 389	History of Landscape Architecture	3
LARC 395	GIS Applications for Landscape Planning	4
ENVS 420 or ENVS 475	Introduction to Bioregional Planning Local and Regional Environmental Planning	3
LARC 480	The Resilient Landscape	3
Plus 12 credits of electives from LARC ¹		12
Plus 6 credits from LARC, ARCH, IAD, VTD, ENVS, or NR ¹		6
Total Hours		97

Courses to total 124 credits for this degree

1

Credits earned in completion of an academic minor may be substituted.

Fall Term 1		Hours
ART 121	Integrated Design Process	3
ARCH 151	Introduction to the Built Environment	3
ENGL 101	Writing and Rhetoric I	3
MATH 143 or STAT 251	College Algebra or Statistical Methods	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
GEOL 101	Physical Geology	3
GEOL 101L	Physical Geology Lab	1
LARC 150	Landscape, Culture and the Environment	3
Humanistic and Artistic Ways of Knowing Course		3
Oral Communications course		3
Hours		16
Fall Term 2		Hours
LARC 210	Landscape Architecture Representation and Media 2	3
LARC 251	Introduction to Principles of Site Design	3
LARC 252	Landscape Architecture Design Foundations Studio	6
LARC 288	Plant Materials & Design 1	3
Hours		15
Spring Term 2		Hours
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
LARC 253	Landscape Architecture Design Process Studio	6
LARC 389	History of Landscape Architecture	3
FOR 221 or NR 321	Principles of Ecology or Ecology	3
Hours		16
Fall Term 3		Hours
LARC 340	Grading, Drainage, and Stormwater Management	4
LARC 353	Landscape Architecture Studio 1	3
LARC 355	Landscape Architecture Studio 2	3
LARC 358	Professional Practice	2
Social & Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		Hours
LARC 341	Construction Materials, Detailing, and Documentation	4
LARC 363	Landscape Architecture Studio 3	3
LARC 365	Landscape Architecture Studio 4	3
LARC 395	GIS Applications for Landscape Planning (Larch 363)	4
LARC Elective		3
Hours		17
Fall Term 4		Hours
ENVS 420 or ENVS 475	Introduction to Bioregional Planning or Local and Regional Environmental Planning	3

LARC elective	3	
LARC elective	3	
LARC/ARCH/IAD/VTD/ENVS/NR Elective	3	
American Diversity Course	3	
Hours		15
Spring Term 4		Hours
LARC 480	The Resilient Landscape	3
LARC elective	3	
LARC elective	3	
LARC/ARCH/IAD/VTD/ENVS/NR Elective	3	
International Course	3	
Hours		15
Total Hours		124

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- SLO1: Landscape Architectural Design Principles: Understand how design of the built environment contributes to more sustainable cities and regions; demonstrate fundamental ability to identify appropriate methods to address social, cultural and ecological problems in the built environment; critically evaluate proposed solutions within the context of socio-cultural, ecological, aesthetic and technological parameters.
- SLO2: Resilience and Sustainability Principles in Environmental Design: Understand principles of resilience in community and regional planning and design; demonstrate ability to apply principles of resilience through appropriate choice of sustainable planning and design methods to promote more sustainable futures and reduce negative ecological and social impacts.
- SLO3: Design Communication: Ability to use a variety of analog, digital, verbal, and written means to think critically, organize information creatively, conceptualize, represent, and clearly communicate critical and complex planning and design proposals.
- SLO4: Problem Solving and Applied Design Research: Understand and engage in research using methods common to the disciplines of Environmental Design and Landscape Architecture to develop environmental design solutions that are responsive to place, addressing diverse technological, social, cultural, and environmental concerns.
- SLO5: Theory in Environmental Design: Apply theoretical influences of environmental design to create design proposals that promote resilient, regenerative and sustainable natural and cultural environments.
- SLO6: Through a range of opportunities including community-based engagement, international travel, independent research, internships, or field trips, the graduate will demonstrate integration of personal abilities and interests with acquired knowledge and professional skills within a global perspective.

Interior Architecture and Design (B.I.A.D.)

The Interior Architecture and Design program is a four-year professional program that leads to a Bachelor of Interior Architecture and Design. Our

mission is to serve as Idaho's only public, accredited, professional interior architecture and design program by providing a strong interdisciplinary design experience through a curriculum accredited by the Council for Interior Design Accreditation (CIDA), allied research, and outreach opportunities. We prepare our graduates to serve society through their professional and community work.

Due to the unique configuration and relationship between Architecture and Interior Architecture and Design, students in the Interior Architecture and Design program graduate with a major in Interior Architecture and Design and—with one additional course—a minor in Architecture. Students can also minor in other disciplines of their choice. Students have the option of completing seamless degrees in Interior Architecture and Design and Architecture over the period of seven years, thus graduating with a B.I.A.D. in Interior Architecture and Design and an M.Arch. in Architecture. Students must hold a minimum GPA of 2.50. A portfolio and transcript review will be conducted in the spring of the sophomore year. Results of the evaluation are made known to applicants in July.

Program permission is required for admittance into the following Architecture and Interior Architecture and Design studio courses. Students must also achieve a minimum grade of 'C' in these courses to enroll in the next sequential studio course.

Code	Title	Hours
ARCH 253	Architectural Design I	4
IAD 152	Interior Architecture and Design I	3
IAD/ARCH 254	Architectural Design II	4
IAD 351	Interior Architecture and Design III	6
IAD 352	Interior Architecture and Design IV	6
IAD 451	Interior Architecture and Design V	6
IAD 452	Interior Architecture and Design VI	6

Required coursework includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
ARCH 151	Introduction to the Built Environment	3
ARCH 154	Introduction to Architectural Graphics	3
ARCH 243	Media in Architecture	3
ARCH 253	Architectural Design I	4
ARCH 266	Materials and Methods	3
ARCH 385 or ARCH 386	Global History of Architecture Global History of Architecture II	3
ARCH 463 & 463L	Environmental Control Systems I and Environmental Control System I Lab	4
ARCH 464 & 464L	Environmental Control Systems II and Environmental Control System II Lab	4
ARCH 475	Professional Practice	3
ART 100	Introduction to Art: Why Art Matters	3
ART 121	Integrated Design Process	3
COMM 101	Fundamentals of Oral Communication	3
IAD 151	Introduction to Interior Architecture and Design	3
IAD 152	Interior Architecture and Design I	3
IAD 231	Design Communication	2
IAD/ARCH 254	Architectural Design II	4
IAD 281	History of Interiors I	3

IAD 282	History of Interiors II	3
IAD 332	Furniture Design and Construction	4
IAD 344	Digital Tools for Interior Architecture and Design	3
IAD 351	Interior Architecture and Design III	6
IAD 352	Interior Architecture and Design IV	6
IAD 368	Interior Materials and Specifications	3
IAD 400	Seminar	2
IAD 410	Capstone Proposal Development	2
IAD 443	Universal Design	3
IAD 451	Interior Architecture and Design V	6
IAD 452	Interior Architecture and Design VI	6

Total Hours **98**

Courses to total 124 credits for this degree

Fall Term 1		Hours
ARCH 151	Introduction to the Built Environment	3
IAD 151	Introduction to Interior Architecture and Design	3
ART 121	Integrated Design Process	3
ENGL 101	Writing and Rhetoric I	3
Social and Behavioral Ways of Knowing Course		3

Hours **15**

Spring Term 1		Hours
ARCH 154	Introduction to Architectural Graphics	3
IAD 152	Interior Architecture and Design I	3
ENGL 102	Writing and Rhetoric II	3
COMM 101	Fundamentals of Oral Communication	3
Mathematical Ways of Knowing Course		3

Hours **15**

Fall Term 2		Hours
IAD 231	Design Communication	2
IAD 281	History of Interiors I	3
ARCH 253	Architectural Design I	4
ARCH 266	Materials and Methods	3
ART 100	Introduction to Art: Why Art Matters	3

Hours **15**

Spring Term 2		Hours
ARCH 243	Media in Architecture	3
IAD 254	Architectural Design II	4
IAD 282	History of Interiors II	3
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4

Hours **17**

Fall Term 3		Hours
IAD 344	Digital Tools for Interior Architecture and Design	3
IAD 351	Interior Architecture and Design III	6
IAD 368	Interior Materials and Specifications	3
ARCH 463	Environmental Control Systems I	3
ARCH 463L	Environmental Control System I Lab	1

Hours **16**

Spring Term 3		Hours
IAD 332	Furniture Design and Construction	4
IAD 352	Interior Architecture and Design IV	6
IAD 443	Universal Design	3
ARCH 464	Environmental Control Systems II	3
ARCH 464L	Environmental Control System II Lab	1

Hours **17**

Fall Term 4		Hours
ARCH 385	Global History of Architecture	3
IAD 410	Capstone Proposal Development	2

IAD 451	Interior Architecture and Design V	6
Scientific Ways of Knowing Course		4
Hours		15
Spring Term 4		
IAD 452	Interior Architecture and Design VI	6
ARCH 386	Global History of Architecture II	3
ARCH 475	Professional Practice	3
IAD 400	Seminar	3
Hours		15
Total Hours		125

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1.a. Student work demonstrates understanding and integration of knowledge concerning precedents, technology, graphic communication, global/cultural, social, economic, and environmental context; and urban and design theory that inform creative problem solving processes.

1.b. Students Identify, analyze, synthesize and apply information from a variety of sources and stakeholders to develop research based user centered comprehensive capstone design projects

2. Students employ all aspects of design process and design thinking to solve design problems through appropriate methods of inquiry, data collection, analysis, and contextually relevant creative, critical, strategic design problem solving and consideration.

3. Students communicate effectively using verbal, graphic, and writing skills.

4. Students address significant social, environmental, cultural and economic challenges posed by built and natural environments creatively and collaboratively.

5.a. Students engage Community Based and Service Learning problems and projects to understand and contribute to the value of interior design to society, environmental impact, and wellness. (Service Learning)

5.b. Students understand the specific roles and ethical and legal responsibilities of the interior design profession to protect the health, safety and welfare of the public.

Interior Architecture and Design Minor

Code	Title	Hours
IAD 151	Introduction to Interior Architecture and Design	3
IAD 281	History of Interiors I	3
IAD 282	History of Interiors II	3
IAD 368	Interior Materials and Specifications	3
IAD 443	Universal Design	3
Directed Electives (as approved by IAD advisor)		3
Total Hours		18

Courses to total 18 credits for this minor

Landscape Architecture (M.L.A.) Master of Landscape Architecture. Major in Landscape Architecture.

Candidates must fulfill the requirements of the College of Graduate Studies and of the Landscape Architecture program including a 3.0 minimum GPA in order to be considered for admission to the Master of Landscape Architecture degree program. See the College of Graduate Studies (p. 292) section for the general requirements applicable to the degree.

The Master of Landscape Architecture is a professional degree accredited by the Landscape Architecture Accreditation Board. There are two pathways to obtain the professional MLA. The first is a 39 credit stand-alone M.L.A., Post-professional Pathway for students entering the program with professional undergraduate degrees in Landscape Architecture, Architecture or closely related fields. The second is a 70 - 71 credit M.L.A., First-professional Pathway, which requires 27 credits of core courses (LARC 555, LARC 558, LARC 562, LARC 500 or LARC 599), plus additional courses to fulfill the curriculum requirements for LAAB accredited degrees. Students applying to the M.L.A. program must demonstrate baccalaureate-level professional preparation in their application materials (transcripts and portfolio) to be admitted to the M.L.A., Post-professional Pathway.

Students in either the First-professional or Post-professional Pathway programs may choose either the thesis or master's project option, typically completed in the final year of study. The thesis option requires 12 credits of LARC 500 thesis coursework focused on original research. The Master's Project option requires 12 credits of LARC 599 non-thesis research coursework focused on original research applied to a landscape architectural project.

MLA, Post-Professional Pathway Requirements:

Code	Title	Hours
LARC 500	Master's Research and Thesis	12
or LARC 599	Non-thesis Master's Research	
LARC 555	Master's Project Preparation	3
LARC 558	Landscape Architecture Graduate Studio 3	6
LARC 562	Landscape Architecture Graduate Studio 4	6
Plus 12 credits of Graduate Electives		12
Total Hours		39

MLA, First-Professional Pathway Requirements:

Code	Title	Hours
GIS course focusing on landscape planning		3 - 4
Professional Practice course		2
LARC 440	Grading, Drainage, and Stormwater Management	4
LARC 441	Construction Materials, Detailing, and Documentation	4
LARC 488	Plant Materials and Design 1	3
LARC 500	Master's Research and Thesis	12
or LARC 599	Non-thesis Master's Research	
LARC 510	Advanced Design Representation and Communication	3

LARC 512	Landscape Analysis and Site Planning	3
LARC 554	Landscape Architecture Graduate Studio 1	6
LARC 555	Master's Project Preparation	3
LARC 556	Landscape Architecture Graduate Studio 2	6
LARC 558	Landscape Architecture Graduate Studio 3	6
LARC 562	Landscape Architecture Graduate Studio 4	6
LARC 589	History and Theory of Landscape Architecture	3
Plus a minimum of 6 credits of Graduate Electives		6
Total Hours		70-71

The following courses are recommended electives, while other courses may be chosen with advisor approval.

Code	Title	Hours
LARC 480	The Resilient Landscape	3
LARC 481	Urban Systems in Ecology	3
LARC 489	Plant Materials and Design 2	3
LARC 491	Italian Hill Towns and Urban Centers	3
LARC 495	Geodesign	3
LARC 520	Regional and Community Design	3
LARC 548	Community Design Studio for Non-majors	3
LARC 564	Summer Study Abroad Design Studio	6
LARC 597	Teaching Assistant, Graduate	3
LARC 598	Internship	1-4

1. The graduate will be able to identify and apply applicable research methods common to the discipline of Landscape Architecture to explore and propose solutions for complex contemporary questions in the discipline.
2. The graduate will acquire and possess verbal, written, and graphic communication skills that demonstrate the ability to think critically, organize information creatively, and use an array of traditional as well as emerging digital tools to communicate products of studio and applied research projects.
3. The graduate will demonstrate the ability to create solutions for place that synthesize process, theory, spatial literacy, technology, and knowledge regarding resilient, regenerative natural and cultural systems.
4. The graduate will use design processes to innovatively and systematically generate place-based solutions at various scales, addressing the complex needs of the built and natural environment, applying digital technologies and traditional design tools to successfully explore a range of design and land planning alternatives.
5. Through a range of opportunities including community-based engagement, international travel, independent research, internships, or field trips, the graduate will demonstrate integration of personal abilities and interests with acquired knowledge and professional skills within a global perspective.

Landscape Architecture Minor

Code	Title	Hours
LARC 150	Landscape, Culture and the Environment	3
LARC 251	Introduction to Principles of Site Design	3
LARC 389	History of Landscape Architecture	3

Select courses from the following:		9
LARC 210	Landscape Architecture Representation and Media 2	
LARC 288	Plant Materials & Design 1	
LARC 353	Landscape Architecture Studio 1	
LARC 355	Landscape Architecture Studio 2	
LARC 363	Landscape Architecture Studio 3	
LARC 365	Landscape Architecture Studio 4	
LARC 364	Summer Study Abroad Design Studio	
LARC 382	Landscape, Language and Culture	
LARC 390	Italian Hill Towns and Urban Centers	
LARC 395	GIS Applications for Landscape Planning	
LARC 480	The Resilient Landscape	
LARC 481	Urban Systems in Ecology	
LARC 495	Geodesign	

Courses to total 18 credits for this minor

Virtual Technologies Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (0-10-a (p. 94)).

Code	Title	Hours
VTD 151	Virtual World Building 1	2
VTD 151L	Lab: Virtual World Building 1	1
VTD 152	Virtual World Building 2	2
VTD 152L	Lab: Virtual World Building 2	1
VTD 153	Virtual World Building 3	2
VTD 153L	Lab: Virtual World Building 3	1
VTD 154	Virtual World Building 4	2
VTD 154L	Lab: Virtual World Building 4	1
Total Hours		12

Courses to total 12 credits for this certificate

Virtual Technology and Design (B.S.)

This is a four-year curriculum leading to a B.S. in Virtual Technology and Design (VTD). After the first year of study, academic achievement is reviewed to determine eligibility for continued study in VTD. Only students with a 2.5 or higher grade-point average are eligible to continue in the studio sequence. Another review is conducted at the end of the second year of study. Applicants to the second and third year are required to submit an electronic media based portfolio containing examples of their art and design work. Applicants should contact the program coordinator regarding acceptable media formats. The submission should also contain a transcript of any college work outside the UI. The deadline for third year applications is the close of the spring semester. Results of the evaluation will be made known to applicants by the end of June. Students accepted into the third and fourth years of the curriculum are required to maintain a minimum GPA of 3.0 and to receive a grade of 'C' or higher in all required VTD courses.

Note: Students who have not been accepted into the second year of the curriculum may not enroll in VTD 200 level design courses. Students who have not been accepted into the third year of the curriculum may not enroll

in VTD 300 level design courses. Students who have left the program or fail a design studio course may only re-enter the curriculum by application to the program admissions committee.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
ART 121	Integrated Design Process	3
CS 112	Computational Thinking and Problem Solving	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
VTD 151	Virtual World Building 1	2
VTD 152	Virtual World Building 2	2
VTD 153	Virtual World Building 3	2
VTD 154	Virtual World Building 4	2
VTD 245	Advanced Modeling	3
VTD 246	Advanced Lighting and Materials	3
VTD 253	Virtual Design I	3
VTD 254	Virtual Design II	3
VTD 271	Cross-Reality Technology I	3
VTD 355	Virtual Design III	4
VTD 356	Virtual Design IV	4
VTD 367	Animation and Visual Effects	3
VTD 372	Cross-Reality Technology 2	3
VTD 400	Seminar	3
VTD 457	Capstone Design Studio I	6
VTD 458	Capstone Design Studio II	6

History or Theory Courses
 Advisor-Approved History or Theory courses. ¹ 12

Directed Electives
 Select three Directed Elective Courses ² 8-9

Total Hours 82-83

Courses to total 120 credits for this degree

1
 Courses must be associated with the disciplines of architecture, art, film, media, music or theatre, with approval of the VTD program. Students must select at least one (3 cr) 400-level course.

2
 Elective Courses that allow a student to develop an emphasis area or breadth in a supporting discipline, with approval of VTD program.

Fall Term 1	Hours	
VTD 151	Virtual World Building 1	2
VTD 152	Virtual World Building 2	2
ART 121	Integrated Design Process	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Hours		13

Spring Term 1	Hours	
VTD 153	Virtual World Building 3	2
VTD 154	Virtual World Building 4	2
Humanities and Artistic Ways of Knowing Course ^{Art 100 suggested}		3
ENGL 102	Writing and Rhetoric II	3
PHYS 111L	General Physics I Lab	1

PHYS 111	General Physics I	3
Hours		14
Fall Term 2		
VTD 245	Advanced Modeling	3
VTD 246	Advanced Lighting and Materials	3
VTD 253	Virtual Design I	3
Scientific Ways of Knowing Course		4
Oral Communication Course		3
Hours		16
Spring Term 2		
CS 112	Computational Thinking and Problem Solving	3
VTD 254	Virtual Design II	3
VTD 271	Cross-Reality Technology I	3
Social and Behavioral Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Fall Term 3		
VTD 355	Virtual Design III	4
VTD 372	Cross-Reality Technology 2	3
History or Theory, Major Elective Course		3
Directed, Major Elective Course		3
International Course		3
Hours		16
Spring Term 3		
VTD 356	Virtual Design IV	4
VTD 367	Animation and Visual Effects	3
History or Theory, Major Elective Course		3
Directed, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		16
Fall Term 4		
VTD 400	Seminar	3
VTD 457	Capstone Design Studio I	6
History or Theory, Major Elective Course		3
American Diversity Course		3
Hours		15
Spring Term 4		
VTD 458	Capstone Design Studio II	6
Directed, Major Elective Course		3
Elective Course		3
History or Theory, Major Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

College of Business and Economics

Dr. Lisa Victoravich, Dean (301A J. A. Albertson Bldg.; 208-885-6071); Dr. Darryl J. Woolley, Associate Dean; Sanjay R. Sisodiya, Associate Dean

College of Business and Economics faculty blend academic and practical experience, conduct cutting-edge research, serve as journal editors, and publish studies that shape local and regional policies. They serve local communities and are active in their fields. Most classes have a low student-to-teacher ratio and are taught by regular faculty.

The college was established as a professional division of the university in 1925. Long known as the College of Business Administration, it became the College of Business and Economics (CBE) in 1969. Its vision is to be a leader in integrated business education and provide a sound background in basic business principles that prepare graduates for positions of responsibility in firms and organizations including entrepreneurial ventures. As part of a state-supported land grant university, the CBE also aims to give its students an appreciation of the social importance and responsibilities of businessmen and businesswomen, and both the values and the knowledge to discharge those responsibilities.

The college's mission is to deliver the best business educational experience in the Northwest through innovative learning experiences, impactful research and community engagement. We accomplish this mission by:

- Delivering transformative undergraduate and focused graduate curricula that provide innovative and active learning experiences.
- Creating research that makes meaningful contributions to the business profession, education, and the academy.
- Sharing our business expertise in support of our state, our professions, and our academic community.
- Nurturing a collaborative environment of interaction among faculty, staff, students, and professionals across disciplines.
- Fostering a collegial culture that values diversity, inclusion, safety, and engagement to enhance the living and learning experience.

The college has adopted a set of learning goals that mirrors this mission. These goals are:

1. Business Knowledge and Environment - CBE students will acquire an integrated understanding of business, accounting, and economic principles;
2. Critical Thinking and Ethical Problem-Solving - CBE students will be able to use appropriate tools of analysis to identify and address problems or opportunities;
3. Communication - CBE students will develop the ability to effectively obtain, organize, and communicate information;
4. Clarify purpose and perspective – CBE students will develop a better understanding of self and their place in the world;
5. Teamwork and Collaboration – CBE students will acquire the ability to interact effectively and professionally with people of varied backgrounds, abilities, and values.

General College Requirements for Graduation

University Requirements

See regulation J-3 (p. 78) for requirements that all students in the university must meet.

College Requirements

Before proceeding to upper-division work, students majoring in the College of Business and Economics (CBE) must have good academic standing.

Undergraduate students enrolled as majors in the College of Business and Economics may not take any course required for the major on a pass/fail basis, with the exception of those courses offered only on a P/F basis.

Courses completed at a two-year college for transfer into the CBE core or major must be validated before they will be accepted for upper-division course requirements. Validation procedures are established by the faculty members of the CBE department offering these courses. Validation techniques include a proficiency examination, CLEP testing, or successful completion of an additional advanced course in the given field.

Candidates for the B.S. Bus. degree must be accepted officially as majors in the College of Business and Economics for at least their last two semesters before graduation, excluding summer sessions, and complete at least the last 24 credit hours applicable toward their degree during this period.

At least 27 upper division College of Business and Economics credits applied to a B.S. Bus. Degree must be earned in residence on the University of Idaho campus. In addition, at least 12 upper division credit hours of the course requirement in the major must be earned on the UI campus.

All majors require the completion of at least 120 credit hours with the exception of the PGA Golf Management options under Economics, Finance, Management and Human Resources, Management Information Systems, Marketing and Operations Management majors, which require completion of at least 128 credit hours. The required program of study includes:

1. 54-57 credit hours in the CBE Common Requirements, and
2. the major-specific required credit hours in the selected CBE major field. Additional undesignated electives are included in the 120 required credit hours (or 128 required credit hours in the case of the PGA Golf Management option).

A. CBE Common Requirements:

Code	Title	Hours
Communication		
COMM 101	Fundamentals of Oral Communication	3
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
PHIL 201	Critical Thinking	
Mathematics and Statistics		
Select one of the following:		3-4

MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
MATH 275	Calculus III	
Select one of the following:		3
STAT 251	Statistical Methods	
STAT 301	Probability and Statistics	
Economics		
Select one of the following options:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one Upper-Division Economics Elective		3
Humanities		
PHIL 103 or PHIL 208	Introduction to Ethics Business Ethics	3
Accounting and Business Law		
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
BLAW 265	Legal Environment of Business	3
Integrated Business Core		
BUS 190	Integrated Business and Value Creation	3
BUS 354	Business Analytics	3
BUS 490	Strategic Management	3
FIN 301	Financial Resources Management	3
MHR 310	Leading Organizations and People	3
MIS 350	Managing Information	3
MKTG 321	Marketing	3
OM 370	Introduction to Operations and Supply Chain Management	3
Total Hours		55-58

B. Requirements in Major (major-specific required credits) Curricula and Degrees Offered

Undergraduate

The degree of Bachelor of Science in Business is offered with seven majors through two departments, as follows: Department of Accounting (accounting and management information systems) and the Department of Business (business economics, finance, management and human resources, marketing, and operations management).

Specific requirements for each major are described in the individual department section. The program of study includes three principal components: the general university requirements, the business and economics core, and the requirements for the selected CBE major field. Detailed statements of college requirements are under "General Requirements for Graduation."

Graduate

The CBE, through the College of Graduate Studies (p. 292), offers the degrees of Master of Accountancy (p. 174) (M.Acct.) in accounting and the Executive MBA (p. 190). The M.Acct. degree qualifies students to enter the public accounting profession in auditing, tax, or other positions ultimately requiring a Certified Public Accountant (CPA) license. The

Executive MBA degree is designed to teach management concepts and an integrated view of business decision making to professionals who have been targeted in succession plans to take on greater managerial responsibility and leadership roles in an organization.

Graduate students must fulfill the requirements of the College of Graduate Studies (p. 292) and the department in which they study.

Accreditation

The University of Idaho College of Business and Economics and Department of Accounting are accredited members of AACSB International (AACSB). We are one of only 187 schools in the world accredited by AACSB for both our college and our accounting program.

Department of Accounting and Management Information Systems

Dr. Tracey Anderson, Department Head (125A J. A. Albertson Bldg.; 208-885-1657)

The goal of the accounting program is to prepare graduates to enter the accounting profession in public accounting, industry, or the public sector. The department offers two degrees: a Bachelor of Science in business, major in accounting; and a master of accountancy. The accounting program is fully accredited by AACSB International.

The department's mission is to provide an engaging learning environment that prepares our undergraduate accounting and Master of Accountancy students to be successful accounting professionals who exhibit high ethical standards. As a land grant university, we have a primary responsibility to serve the citizens of Idaho and the region through scholarly and outreach activities.

We accomplish this mission by:

- Delivering a high quality program of accounting studies that encompasses the relevant features of a dynamic accounting and business environment.
 - For undergraduate students, deliver general preparation in accounting to provide a foundation for future study or employment.
 - For graduate students, build upon the foundation to prepare for an accounting career.
- Providing experiential learning opportunities for our students.
- Engaging in research that makes meaningful contributions to accounting practice and accounting education.
- Delivering and supporting outreach programs that build on our competencies within the college and meet the needs of our stakeholders.
- Sharing our accounting expertise in support of our state, our professions and the academic community.

The department has adopted the CBE Learning Goals for the undergraduate accounting majors (See College of Business and Economics (p. 172) Part IV of this catalog). Undergraduate accounting majors will also acquire specific knowledge in financial reporting, cost and managerial accounting, taxation, and auditing. The Master of Accountancy (MACCT) Learning Goals mirror the College of Business and Economics learning goals. These goals are:

- Professional Accounting Knowledge - MACCT students will acquire advanced accounting knowledge to prepare them for the accounting profession or further graduate work;
- Critical Thinking and Ethical Problem Solving - MACCT students will demonstrate critical thinking skills necessary for identifying and addressing complex situations in accounting-related areas including ethical dilemmas;
- Research Skills - MACCT students will be able to locate appropriate information, apply the rules or standards to a set of facts, and make an appropriate recommendation regarding a course of action;
- Communication – MACCT students will enhance their ability to effectively communicate through oral presentations and professional writing assignments;
- Clarify purpose and perspective – MACCT students will have opportunities for experiential learning, relationship development, and appreciation of global perspectives;
- Teamwork and Collaboration –MACCT students will have opportunities to enhance their ability to interact in teams.

The M.Acct. degree program has primary emphasis areas that include auditing and financial accounting, corporate accounting management and controllership, government and not-for-profit fiscal management, international accounting, accounting information systems analysis and design, and taxation. Other emphasis areas or tracks are permitted, subject to approval by the departmental graduate committee.

Admission to the M.Acct. degree requires

1. a B.S., B.A., or B.B.A. degree from an accredited college or university,
2. an undergraduate grade-point average of at least 3.00, and
3. a minimum TOEFL score of 550 (if applicable).

The department, in conjunction with the College of Law, offers a concurrent J.D./M.Acct. degree. See the College of Graduate Studies (p. 292) and the College of Law (p. 304) sections for additional information on graduate/law concurrent degrees.

Majors

- Accounting (B.S.Bus.) (p. 175)
- Management Information Systems (B.S.Bus.) (p. 178)

Minors

- Accounting Minor (p. 177)

Certificates

- Business Analytics Undergraduate Academic Certificate (p. 177)
- Enterprise Systems Integration Undergraduate Academic Certificate (p. 177)
- Technical Program Management Undergraduate Academic Certificate (p. 179)

Accounting Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Accounting. See the College of Graduate Studies (p. 292) section for the general requirements applicable to the M.S. degree. See Concurrent Degrees (p. 306) for information about the concurrent J.D./M.Acct degree.

- Accountancy (M.Acct.) (p. 174)

Accountancy (M.Acct.)

The Master of Accountancy degree requires 30 semester credits beyond the bachelor's degree, and is designed to meet the 150-credit requirement for taking the CPA examination in Idaho. Completion of this degree qualifies students to enter the public accounting profession in auditing, tax, or other positions ultimately requiring a CPA license.

Students seeking the M.Acct. degree will develop a degree plan in consultation with their advisors, complete at least 30 credits of course work, and successfully complete a comprehensive paper and portfolio.

If a student has earned a B.S. in Accounting (or equivalent), the required courses include:

Code	Title	Hours
ACCT 586	Contemporary Management Accounting Issues	3
ACCT 590	Advanced Auditing Seminar	3
ACCT 592	Financial Accounting and Reporting Seminar	3
Select two courses from the following:		6
ACCT 515	Advanced Financial Accounting & Reporting	
ACCT 521	Accounting Data Analytics	
ACCT 530	Accounting for Public Sector Entities	
ACCT 550	Fraud Examination	
ACCT 555	Forensic Accounting	
ACCT 561	Comparative Accounting Theory	
ACCT 584	Federal Taxation of Entities	
ACCT 585	Estate and Elder Planning	
ACCT 598	Internship (Max 3 credits)	
ACCT 599	Non-thesis Master's Research (Max 6 credits)	
Additional 15 credits chosen from approved courses		15
Total Hours		30

Taxation Emphasis

General Master of Accountancy requirements apply. A total of 30 credits are required for this degree.

Code	Title	Hours
12 credits from the following or approved electives:		12
ACCT 584	Federal Taxation of Entities	
ACCT 585	Estate and Elder Planning	
ACCT 598	Internship	
BLAW 425	Law of Business Entities	
Additional 9 credits from approved courses		9
Total Hours		21

Audit and Fraud Examination Emphasis

General Master of Accountancy requirements apply. A total of 30 credits are required for this degree.

Code	Title	Hours
12 credits from the following or approved electives:		12
ACCT 521	Accounting Data Analytics	
ACCT 550	Fraud Examination	

ACCT 555	Forensic Accounting	
ACCT 598	Internship	
MIS 453	Database Design	
MIS 455	Data Management for Big Data	
Additional 9 credits from approved courses		9
Total Hours		21

In addition, students must have taken at least one US tax class and at least one Business Law class at the upper-division undergraduate level or at the graduate level. Those electing for the thesis option include 6 credits of ACCT 500 in the additional 15 credits (must still complete comprehensive paper and portfolio).

If a student has not earned a B.S. in Business (or equivalent), in addition to the above mentioned courses, the student must take or have taken at least 24 credits of business, economics, statistics, and business law courses at the undergraduate level or at the graduate level. These courses must include at least two business disciplines (e.g. management, marketing, and finance).

- Professional Accounting Knowledge and Environment - Overall, M.Acct. students will acquire a deeper and more broad set of accounting knowledge to prepare them for the accounting profession or further.
- Critical Thinking and Ethical Problem-Solving - M.Acct. students will effectively analyze problems and make decisions ethically.
 - M.Acct. graduates will demonstrate critical thinking skills necessary for identifying and addressing complex situations in accounting and business-related areas. (ACCT 586, ACCT 590, ACCT 592)
 - M.Acct. graduates will apply frameworks for examining ethical issues in business decisions. (ACCT 586, ACCT 590, ACCT 592)
 - M.Acct. graduate will demonstrate research skills, including ability to locate appropriate information, apply the rules or standards to a set of facts, and make an appropriate recommendation regarding a course of action. (ACCT 590, ACCT 592, and several electives)
- Communication – M.Acct. students will refine their ability to effectively obtain, organize, and communicate information.
 - M.Acct. program graduates will demonstrate competence in effective oral communication of Accounting and Business information. (ACCT 586, ACCT 590, ACCT 592)
 - M.Acct. program graduates will demonstrate competence in effective written communication of Accounting and Business information. (ACCT 586, ACCT 590, ACCT 592)
- M.Acct. students will gain a better understanding of self, work relationships, and global perspectives.
 - M.Acct. graduates will be impacted by curricular and co-curricular activities that develop self and ability to interact with others. (ACCT 503 Workshops and ACCT 598 Internship)
- M.Acct. graduates will acquire the ability to effectively manage relationships with and lead people of varied backgrounds and abilities.
 - M.Acct. graduates will interact effectively and professionally with others in teams to evaluate information and solve accounting-related problems.
 - M.Acct. graduates will effectively lead others in teams to evaluate information and solve accounting-related problems.
- M.Acct. graduates will:

- Demonstrate an understanding and application of the Balanced Scorecard and its use in strategy.
- Demonstrate the ability to develop and effectively use a budget for financial planning and control.
- Appropriately apply Activity-Based Costing method to analyze costs in decision making.

- M.Acct. graduates will:
 - Demonstrate an understanding of complex audit standards.
 - Perform complex audit procedures, including the evaluation of inherent risk and control risk
 - Analyze complex manipulations of financial statements using appropriate audit procedures.

Accounting (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general requirements for graduation from the College of Business and Economics (p. 172), and:

Code	Title	Hours
College of Business & Economics Requirements (p. 172)		54-57
Major Requirements		28-33
Total Hours		82-90

Major Requirements

Code	Title	Hours
ACCT 305	Accounting Information Systems	3
ACCT 315	Intermediate Financial Accounting I	3
ACCT 325	Intermediate Financial Accounting II	3
ACCT 385	Cost and Management Accounting	3
ACCT 421	Accounting Data Analytics	3
ACCT 483	Fundamentals of Federal Taxation	3
ACCT 492	Auditing and Controls	3
Select one Accounting Electives from the following:		3
ACCT 415	Advanced Financial Accounting & Reporting	
ACCT 440	Fraud Examination	
ACCT 484	Federal Taxation of Entities	
ACCT 530	Accounting for Public Sector Entities	
ACCT 585	Estate and Elder Planning	
BLAW 420	Commercial Law	
BLAW 425	Law of Business Entities	
Select one additional course in Communication or Writing beyond the UI general Education requirements:		3
COMM 240	Small Group Communication	
COMM 335	Intercultural Communication	
COMM 347	Persuasion	
COMM 410	Conflict Management	
COMM 431	Applied Business and Professional Communication	
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
PHIL 201	Critical Thinking	

Select at least one credit from the following experiential learning courses: ¹ 1-6

ACCT 403	Workshop ²
ACCT 498	Accounting Internship Program
ACCT 595	Practicum in Tutoring
BUS 429	Vandal Solutions
ENTR 415	New Venture Creation
FIN 460	Advanced Student Investment Fund Management
FIN 467	Barker Capital Management Group
FIN 468	Market Trading Lab
MIS 456	Cybersecurity Competition
OM 439	Systems and Simulation

Total Hours 28-33

Courses to total 120 credits for this degree

1

This requirement may be waived by completion of relevant accounting experience or another University of Idaho course with approval of department head.

2

Specific ACCT 403 Workshops include Accounting Professional Development, Internal Control Review, Volunteer Income Taxation Assistance Program, and Study Abroad.

Fall Term 1	Hours
BUS 190 Integrated Business and Value Creation	3
COMM 101 Fundamentals of Oral Communication	3
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
Scientific Ways of Knowing Course	4
Hours	16
Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
Scientific Ways of Knowing Course	4
International Course	3
Elective Course	3
Hours	16
Fall Term 2	Hours
ACCT 201 Introduction to Financial Accounting	3
BLAW 265 Legal Environment of Business	3
ECON 201 Principles of Macroeconomics	3
PHIL 208 Business Ethics	3
STAT 251 Statistical Methods	3
Hours	15
Spring Term 2	Hours
ACCT 202 Introduction to Managerial Accounting	3
BUS 354 Business Analytics	3
ECON 202 Principles of Microeconomics	3
MKTG 321 Marketing	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201	3
Hours	15
Fall Term 3	Hours
FIN 301 Financial Resources Management	3
MHR 310 Leading Organizations and People	3
MIS 350 Managing Information	3
OM 370 Introduction to Operations and Supply Chain Management	3

Social and Behavioral Ways of Knowing Course	3
Hours	15
Spring Term 3	Hours
ACCT 305 Accounting Information Systems	3
ACCT 315 Intermediate Financial Accounting I	3
ACCT 385 Cost and Management Accounting	3
American Diversity Course	3
UPDV Economics, Major Elective Course	3
Hours	15
Fall Term 4	Hours
ACCT 325 Intermediate Financial Accounting II	3
ACCT 421 Accounting Data Analytics	3
ACCT 483 Fundamentals of Federal Taxation	3
ACCT 415 OR ACCT 440 OR ACCT 484 OR ACCT 530 OR ACCT 585 OR BLAW 420 OR BLAW 425	3
ACCT 403 OR ACCT 498 OR ACCT 595 OR BUS 429 OR ENTR 415 OR FIN 460 OR FIN 467 OR FIN 468 OR MIS 456 OR OM 439	1
Hours	13
Spring Term 4	Hours
ACCT 492 Auditing and Controls	3
BUS 490 Strategic Management	3
Elective Course	3
ACCT 415 OR ACCT 440 OR ACCT 484 OR ACCT 530 OR ACCT 585 OR BLAW 420 OR BLAW 425	3
COMM 335 OR COMM 347 OR COMM 410 OR COMM 431 OR ENGL 207 OR ENGL 313 OR ENGL 316 OR ENGL 317 OR PHIL 201	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

- Accounting majors will demonstrate Financial Accounting knowledge. They will:
 - Apply selected external financial reporting topics.
 - Determine and apply the most appropriate GAAP for specific transactions.
 - Analyze the implications of individual transactions (or journal entries) for net income, the financial statements, and common financial ratios.
- Accounting majors will:
 - Apply methods to measure costs.
 - Analyze costs.
 - Develop income and cash budgets.
- Accounting majors will:
 - Demonstrate ability to analyze accounting cycles & internal controls.
 - Demonstrate an understanding of processing accounting information.
 - Demonstrate an understanding of logical design of an AIS.
- Accounting majors will:
 - Demonstrate an understanding of the Audit Environment.
 - Demonstrate an understanding of Audit Planning.
 - Demonstrate an understanding of the Audit Process.
 - Demonstrate an understanding of the Audit Reporting.
 - Demonstrate an understanding of the Audit Ethics.

5. Accounting majors will demonstrate an understanding of Income Taxation Theory.
6. Accounting majors will apply frameworks for examining ethical issues in business decisions. They will
 - a. Identify dilemmas.
 - b. Consider stakeholders.
 - c. Analyze alternatives and consequences.
7. Accounting majors will demonstrate competence in effective oral communication of Accounting and Business information.
8. Accounting majors will demonstrate competence in effective written communication of Accounting and Business information.
9. Accounting majors will acquire the ability to interact effectively and professionally with people of varied backgrounds, abilities, and values.

Accounting Minor

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
ACCT 315	Intermediate Financial Accounting I	3
Select 9 credits from the following:		9
ACCT 305	Accounting Information Systems	
ACCT 325	Intermediate Financial Accounting II	
ACCT 385	Cost and Management Accounting	
ACCT 415	Advanced Financial Accounting & Reporting	
ACCT 421	Accounting Data Analytics	
ACCT 440	Fraud Examination	
ACCT 482	Enterprise Accounting	
ACCT 483	Fundamentals of Federal Taxation	
ACCT 484	Federal Taxation of Entities	
ACCT 492	Auditing and Controls	
ACCT 530	Accounting for Public Sector Entities	
ACCT 585	Estate and Elder Planning	
BLAW 420	Commercial Law	
BLAW 425	Law of Business Entities	
Total Hours		18

Courses to total 18 credits for this minor

Business Analytics Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
BUS 354	Business Analytics	3
or STAT 431	Statistical Analysis	
MIS 440	Data Visualization for Managerial Decision Making	3
Select two additional courses from the following:		6
ACCT 421	Accounting Data Analytics	
BUS 354	Business Analytics	
ECON 453	Econometrics	
FIN 463	Portfolio Management	

MHR 417	Deploying and Developing Human Capital
MIS 453	Database Design
MIS 455	Data Management for Big Data
MKTG 431	Marketing Analytics
OM 439	Systems and Simulation (prerequisite of OM 370)
or OM 470	Supply Chain Analytics
STAT 419	Introduction to SAS/R Programming ¹
or STAT 422	Survey Sampling Methods
or STAT 426	SAS Programming
or STAT 427	R Programming

¹

May not choose these courses if STAT 431 is taken in lieu of BUS 354.

Courses to total 12 credits for this certificate

1. Students will use inference, regression, times series, decision analysis, and optimization to analyze business problems.
2. Students will demonstrate basic programming and SQL skills as relating to data acquisition and access.
3. Students will analyze and assess data quality and use appropriate tools to clean the data.
4. Students will demonstrate use of a variety of data management tools and software for analysis.
5. Students will present information as visualizations for management decision making.

Enterprise Systems Integration Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
ACCT 385	Cost and Management Accounting	3
or MIS 440	Data Visualization for Managerial Decision Making	
ACCT 305	Accounting Information Systems	3
MHR 310	Leading Organizations and People	3
MIS 353	Application Development	3
or MIS 355	Systems Analysis & Administration	
Total Hours		12

Courses to total 12 credits for this certificate

- Students completing the Enterprise Systems Integration certificate will create applications and systems meeting the expectations of the users and the enterprises.
- Students completing the Enterprise Systems Integration certificate will demonstrate effective leadership behaviors and skills for the enterprise.
- Students completing the Enterprise Systems Integration certificate will collect, categorize, calculate, analyze, and report cost and other data about the enterprise.
- Students completing the Enterprise Systems Integration certificate will apply analytic techniques to analyze and audit enterprise data.

Management Information Systems (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the college requirements, and:

Code	Title	Hours
College of Business & Economics Requirements (p. 172)		54-57
Major Requirements		24
Total Hours		78-81

Major Requirements

Code	Title	Hours
CS 112	Computational Thinking and Problem Solving	3
or CS 120	Computer Science I	
or MIS 250	Introductory Systems Development	
MIS 353	Application Development	3
MIS 355	Systems Analysis & Administration	3
MIS 440	Data Visualization for Managerial Decision Making	3
MIS 452	Data Communications & Network Management	3
MIS 453	Database Design	3

Select at least two additional Restricted MIS Elective courses from the following OR one 400 level course offered by College of Business and Economics and one course from the following:

ACCT 305	Accounting Information Systems	
ACCT 421	Accounting Data Analytics	
CS 120	Computer Science I	
CS 210	Programming Languages	
CS 240	Computer Operating Systems	
CS 270	System Software	
CYB 110	Cybersecurity and Privacy	
CYB 210	Cybersecurity Architectures and Management	
ECON 453	Econometrics	
FIN 463	Portfolio Management	
GEOG 385	Foundations of GIS	
GEOG 390	Cartographic Design & Geovisualization	
MHR 417	Deploying and Developing Human Capital	
MIS 454	Issues in Information Systems	
MIS 456	Cybersecurity Competition	
MKTG 431	Marketing Analytics	
OM 378	Project Management	
OM 439	Systems and Simulation	

Total Hours **24**

Courses to total 120 credits for this degree

A. PGA Golf Management Option

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II ¹	3
PGA 298	Internship (Max 6 credits)	4
PGA 385	PGA Golf Management III	3

PGA 398	Internship	1-3
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2

Total Hours **22-24**

1

PGA 251 and PGA 385, together, can be used to meet the requirement for the Specialized Elective or the Marketing & Entrepreneurship Elective.

Courses to total 129 credits for this degree.

In addition to all other requirements, students must take at least 9 credits from outside the CBE in addition to those specifically required. These may be chosen from the restricted electives or from other courses.

Fall Term 1		Hours
COMM 101	Fundamentals of Oral Communication	3
BUS 190	Integrated Business and Value Creation	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
American Diversity Course		3
CS 112	Computational Thinking and Problem Solving	3
or CS 120	or Computer Science I	
or MIS 250	or Introductory Systems Development	
Hours		16
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
ECON 201	Principles of Macroeconomics	3
BLAW 265	Legal Environment of Business	3
STAT 251	Statistical Methods	3
PHIL 208	Business Ethics	3
Hours		15
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
ECON 202	Principles of Microeconomics	3
BUS 354	Business Analytics	3
MHR 310	Leading Organizations and People	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		Hours
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		Hours
MIS 353	Application Development	3
UPDV Economics, Major Elective Course		3
Elective Course		3
Non CBE Elective, Major Elective Course		3
Non CBE Elective, Major Elective Course		3
Hours		15

Fall Term 4		
MIS 355	Systems Analysis & Administration	3
MIS 453	Database Design	3
Restricted, Major Elective Course		3
MIS 452	Data Communications & Network Management	3
Restricted, Major Elective Course		3
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
International Course		3
MIS 440	Data Visualization for Managerial Decision Making	3
Non CBE Elective, Major Elective Course		3
Elective Course		1
Hours		13
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

A. PGA Golf Management Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PGA 103	Introduction to PGA Golf Management	2
Scientific Ways of Knowing Course		4
Hours		18
Spring Term 1		
CS 112	Computational Thinking and Problem Solving	3
ENGL 102	Writing and Rhetoric II	3
PGA 150	PGA Golf Management I	3
PHIL 208	Business Ethics	3
Scientific Ways of Knowing Course		4
Hours		16
Summer Term 1		
PGA 298	Internship	2
Hours		2
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
STAT 251	Statistical Methods	3
PGA 251	PGA Golf Management II	3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
RSTM 105	Teaching Golf I	2
Hours		14
Summer Term 2		
PGA 298	Internship	2
Hours		2

Fall Term 3		
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
RSTM 205	Teaching Golf II	2
Hours		14
Spring Term 3		
MIS 353	Application Development	3
PGA 385	PGA Golf Management III	3
Non-CBE Elective, Major Elective Course		3
Non-CBE Elective, Major Elective Course		3
Upper-division Economics, Major Elective Course		3
Hours		15
Summer Term 3		
PGA 398	Internship	3
Hours		3
Fall Term 4		
MIS 453	Database Design	3
MIS 355	Systems Analysis & Administration	3
MIS 452	Data Communications & Network Management	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
American Diversity Course		3
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
MIS 440	Data Visualization for Managerial Decision Making	3
RSTM 305	Teaching Golf III	2
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Hours		14
Summer Term 4		
PGA 398	Internship	3
Hours		3
Total Hours		131

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will develop and demonstrate a business application based on user requirements.
2. Students will demonstrate an understanding of telecommunications systems and the management of MIS.
3. Students will demonstrate an understanding of the relational database model.
4. Students will identify IS threats and plan a security plan.
5. Students will identify the problems of and economics of big data.

Technical Program Management Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (0-10-a (p. 94)).

Code	Title	Hours
MIS 250 or MIS 440	Introductory Systems Development Data Visualization for Managerial Decision Making	3
MIS 350 or MIS 355	Managing Information Systems Analysis & Administration	3
OM 370	Introduction to Operations and Supply Chain Management	3
OM 378	Project Management	3
Total Hours		12

Courses to total 12 credits for this certificate

- Students completing the Technical Project Management certificate will demonstrate understanding using both “soft” project management skills (e.g., stakeholder management, conflict management, project leadership) and “hard” project management skills (e.g., budgeting, scheduling, risk management) to successfully manage a project through its life cycle (i.e., initiation, planning, execution, and closing).
- Students completing the Technical Project Management certificate will demonstrate critical thinking about how to approach an operation’s challenges including those with ethical and international implications.
- Students completing the Technical Project Management certificate will explain the nature and significance of decisions to create sustainable processes to produce goods and services.
- Students completing the Technical Project Management certificate will develop technical knowledge in a programming language and demonstrate usable code.

Department of Business

Dr. Mya Groza, Dept. Head (225A J. A. Albertson Bldg. 83844-3161; phone 208-885-6295 (admin); 208-885-1197 (Dept. Head); myagroza@uidaho.edu.

The five major fields (business economics, finance, management and human resources, marketing, and operations and supply chain management) within the department lead to the B.S.Bus. degree. These programs provide a solid foundation in the liberal arts, a broad professional preparation in business, and in-depth course work in a major field. They are designed to prepare the student to excel in a competitive market environment. There is also a B.A. or B.S. degree available in Economics. The department offers minors in business, business analytics, economics, international business, marketing, and sales management. In addition, the department offers three certificates: one in entrepreneurship, one in small business management, and one in trading and capital management.

The business economics major prepares students for careers as economic forecasters, bankers, stockbrokers, labor or marketing analysts, lobbyists, or regional development specialists. The department offers three undergraduate economics degree programs, one in the College of Business and Economics (CBE) and two in the College of Letters, Arts, and Social Sciences (CLASS). The essential difference among these programs is that those in the College of Letters, Arts, and Social Sciences require fewer business courses and allow more electives. The less structured programs in this college are in the liberal arts tradition. A minor in economics is also offered through CLASS. Another minor in international policy economy is offered jointly through CLASS and CBE.

The PGA golf management option prepares students for a successful career in the golf industry. Accredited by the Professional Golfers Association (PGA), it is the only PGA accredited golf management

program in the northwest and one of only 18 in the country. PGA Golf Management is an option for any of the business majors noted above.

The finance major prepares students for careers in commercial lending, security analysis, trading, portfolio management, and corporate finance.

The management and human resources major prepares students for opportunities in the areas of management and personnel administration. The management emphasis has a macro focus oriented toward a more general managerial focus. The human resources management emphasis is directed toward those individuals preparing for careers in personnel administration, recruitment and selection, training, compensation and benefits, and labor relations. The Entrepreneurship and Small-Business Management Emphasis focuses on how to successfully operate a small business.

The marketing major prepares students for opportunities in a broad range of areas including management of retail and wholesale distribution, advertising, market research, services marketing, and product management. Marketing has five emphases: General Marketing, Marketing Analytics, Entrepreneurship, Sales Management, and PGA Golf Management.

The operations and supply chain management major prepares students for management positions in operations planning and control, process management, project management, quality management, and/or purchasing.

The business minor is designed for students outside of the CBE who desire exposure to the field of business. The minor covers the primary fields in business and provides a background in business as a basis for further graduate work. Also, the minor complements the student’s academic major and future professional career.

The business analytics minor prepares students to explore the large datasets all organizations now have to help create effective business decisions.

Majors

- Business Administration (B.B.A.) (p. 181)
- Business Economics (B.S.Bus.) (p. 182)
- Economics (B.A. or B.S.) (p. 185)
- Finance (B.S.Bus.) (p. 188)
- Management and Human Resources (B.S.Bus.) (p. 190)
- Management Information Systems (B.S.Bus.) (p. 178) (now offered by the Department of Accounting)
- Marketing (B.S.Bus.) (p. 194)
- Operations and Supply Chain Management (B.S.Bus.) (p. 199)

Minors

- Business Minor (p. 185)
- Business Analytics Minor (p. 182)
- Economics Minor (p. 187)
- Entrepreneurship Minor (p. 187)
- International Business Minor (p. 190)
- Marketing Minor (p. 199)
- Sales Management Minor (p. 201)

Certificates

- Applied Finance Undergraduate Academic Certificate (p. 181)
- Business Leadership Undergraduate Academic Certificate (p. 185)
- Entrepreneurship Undergraduate Academic Certificate (p. 187)
- Promotions and Digital Marketing Undergraduate Academic Certificate (p. 201)
- Sales Management Undergraduate Academic Certificate (p. 201)
- Small Business Management Undergraduate Academic Certificate (<https://catalog.uidaho.edu/colleges-related-units/business-economics/business/small-business-management-certificate/>)
- Trading and Capital Management Undergraduate Academic Certificate (p. 201)

Business Graduate Program

- General Management (M.B.A.) (p. 190)

Applied Finance Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
ECON 340	Managerial Economics	3
FIN 301	Financial Resources Management	3
FIN 322	Insurance	2
FIN 323	Commercial Finance	1
FIN 324	Real Estate	2
FIN 325	Financial Planning Services	1
Total Hours		12

Courses to total 12 credits for this certificate

- Understand the basic principles of financial management for businesses.
- Understand the fundamental economic principles in applied business decisions.
- Understand the basics of financial services for consumers, including insurance, budgeting, consumer financing, and planning for retirement.
- Understand the different methods that large and small business use to attract and service capital.
- Understand retail and commercial real estate markets and how real estate professionals serve their clients.

Business Administration (B.B.A.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)), and:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
BUS 190	Integrated Business and Value Creation	3

ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
MATH 143	College Algebra (Or higher MATH course)	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Choose a writing elective from the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
PHIL 201	Critical Thinking	
Choose four of the following five certificates:		48
Applied Finance (p. 181)		
Business Leadership (p. 185)		
Enterprise Systems Integration (p. 177)		
Sales Management (p. 201)		
Technical Program Management (p. 179)		
Capstone Course:		3
BUS 490	Strategic Management	

Total Hours 75

Courses to total 120 credits for this degree

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
ECON 201	Principles of Macroeconomics	3
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
ECON 202	Principles of Microeconomics	3
Scientific Ways of Knowing Course		4
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Hours		16
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
STAT 251	Statistical Methods	3
Social and Behavioral Ways of Knowing		3
Scientific Ways of Knowing Course		4
Certificate Course, Major Elective Course		3
Hours		16
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Certificate Course, Major Elective Course		3
Certificate Course, Major Elective Course		3
Hours		15
Fall Term 3		Hours
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Certificate Course, Major Elective Course		3
Certificate Course, Major Elective Course		3
Certificate Course, Major Elective Course		3
Elective Course		3
Hours		15

Spring Term 3

Certificate Course, Major Elective Course	3
Certificate Course, Major Elective Course	3
Certificate Course, Major Elective Course	3
Elective Course	3
Elective Course	3
Hours	15

Fall Term 4

Certificate Course, Major Elective Course	3
Certificate Course, Major Elective Course	3
Certificate Course, Major Elective Course	3
Certificate Course, Major Elective Course	3
Elective Course	3
Hours	15

Spring Term 4

BUS 490 Strategic Management	3
Certificate Course, Major Elective Course	3
Certificate Course, Major Elective Course	3
Certificate Course, Major Elective Course	3
Elective Course	2
Hours	14
Total Hours	121

1. Graduating students will recall knowledge of Accounting Principles
2. Graduating students will recall knowledge of Economics Principles
3. Graduating students will demonstrate competency in the learning objectives in each of the four certificates they choose to complete this degree. (Specific certificate learning objectives are included with the certificates).

Business Analytics Minor

Code	Title	Hours
MIS 455	Data Management for Big Data	3
MATH 330	Linear Algebra	3
OM 439	Systems and Simulation	4
STAT 431	Statistical Analysis	3
Electives		6

Select 6 credits from the following:

ACCT 421	Accounting Data Analytics	
CS 336	Introduction to Information Assurance	
ECON 453	Econometrics	
FIN 463	Portfolio Management	
GEOG 385	Foundations of GIS	
MATH 438	Mathematical Modeling	
MIS 453	Database Design	
MKTG 421	Marketing Research & Analysis	
MKTG 431	Marketing Analytics	
OM 456	Enterprise Quality Management	
STAT 404	Special Topics	
STAT 422	Survey Sampling Methods	
STAT 426	SAS Programming	
Total Hours		19

Courses to total 19 credits for this minor

Business Economics (B.S.Bus.)

This program is offered through the College of Business and Economics (p. 172).

Students preparing for professional careers as economists in private business, government service, or careers where a broad knowledge of economics is useful should elect this curriculum.

Required course work includes the university requirements (see regulation J-3 (p. 78)), the college requirements, and:

Code	Title	Hours
	College of Business & Economics Requirements (p. 172)	54-57
	Major Requirements	24-60
Total Hours		78-117

Major Requirements

Code	Title	Hours
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
ECON 453	Econometrics	3
ECON 490	Economic Theory and Policy	3

Options

Select one of the following options:	12-48
General (p. 182)	
Financial Economics (p. 182)	
PGA Golf Management (p. 183)	
Total Hours	24-60

A. General Option

Code	Title	Hours
	Select 9 Upper-Division Credits in Economics	9
	Select one Upper-Division Elective	3
Total Hours		12

Courses to total 120 credits for this degree

B. Financial Economics Option

Code	Title	Hours
FIN 302	Intermediate Financial Management	3
FIN 407	Financial Institutions	3
ECON 343	Money and Banking	3
Select at least one of the following:		3
FIN 381	International Finance	
FIN 408	Security Analysis	
FIN 463	Portfolio Management	
FIN 464	Derivatives and Risk Management	
Select one Upper-Division Economics Elective		3
Total Hours		15

Courses to total 120 credits for this degree

C. PGA Golf Management Option

Required course work includes all Business Economics, the Business Economics General Option requirements and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II ¹	3
PGA 298	Internship (Max 6 credits)	4
PGA 385	PGA Golf Management III	3
PGA 398	Internship (Max 6 credits)	6
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		27

1

PGA 251 and PGA 385, together, can be used to meet the requirement for the Specialized Elective or the Marketing & Entrepreneurship Elective.

Courses to total 129 credits for this degree

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status.

General Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
STAT 251	Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Elective Course		2
Hours		15
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
ECON 201	Principles of Macroeconomics	3
BLAW 265	Legal Environment of Business	3
PHIL 208	Business Ethics	3
Elective Course		3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MKTG 321	Marketing	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		
ECON 351	Intermediate Macroeconomic Analysis	3
FIN 301	Financial Resources Management	3
MHR 310	Leading Organizations and People	3

MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Hours		15
Spring Term 3		
ECON 352	Intermediate Microeconomic Analysis	3
UPDV Economics, Major Elective Course		3
American Diversity Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Hours		15
Fall Term 4		
ECON 453	Econometrics	3
UPDV Economics, Major Elective Course		3
UPDV Economics, Major Elective Course		3
UPDV, Major Elective Course		3
International Course		3
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
ECON 490	Economic Theory and Policy	3
UPDV Economics, Major Elective Course		3
Elective Course		3
Elective Course		2
Hours		14
Total Hours		120

Financial Economics Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
STAT 251	Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Elective Course		1
Hours		14
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PHIL 208	Business Ethics	3
Elective Course		3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MKTG 321	Marketing	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		
FIN 301	Financial Resources Management	3
MHR 310	Leading Organizations and People	3
MIS 350	Managing Information	3

OM 370	Introduction to Operations and Supply Chain Management	3
ECON 351	Intermediate Macroeconomic Analysis	3
Hours		15
Spring Term 3		
ECON 352	Intermediate Microeconomic Analysis	3
UPDV Economics, Major Elective Course		3
American Diversity Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Hours		15
Fall Term 4		
ECON 343	Money and Banking	3
ECON 453	Econometrics	3
FIN 302	Intermediate Financial Management	3
International Course		3
FIN 381 OR FIN 408 OR FIN 463 OR FIN 464		3
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
ECON 490	Economic Theory and Policy	3
FIN 407	Financial Institutions	3
UPDV Economics, Major Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

PGA Golf Management Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PGA 103	Introduction to PGA Golf Management	2
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
PGA 150	PGA Golf Management I	3
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Hours		13
Summer Term 1		
PGA 298	Internship	2
Hours		2
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PGA 251	PGA Golf Management II	3
STAT 251 OR STAT 301		3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MKTG 321	Marketing	3
RSTM 105	Teaching Golf I	2
Hours		14

Summer Term 2		
PGA 298	Internship	2
Hours		2
Fall Term 3		
ECON 351	Intermediate Macroeconomic Analysis	3
FIN 301	Financial Resources Management	3
MHR 310	Leading Organizations and People	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
RSTM 205	Teaching Golf II	2
Hours		17
Spring Term 3		
ECON 352	Intermediate Microeconomic Analysis	3
PGA 385	PGA Golf Management III	3
American Diversity Course		3
UPDV Economics, Major Elective Course		3
Scientific Ways of Knowing Course		4
Hours		16
Summer Term 3		
PGA 398	Internship	3
Hours		3
Fall Term 4		
ECON 453	Econometrics	3
RSTM 305	Teaching Golf III	2
UPDV Economics, Major Elective Course		3
UPDV Economics, Major Elective Course		3
UPDV Elective, Major Elective Course		2
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		16
Spring Term 4		
BUS 490	Strategic Management	3
ECON 490	Economic Theory and Policy	3
PHIL 208	Business Ethics	3
UPDV Economics, Major Elective Course		3
International Course		3
Hours		15
Summer Term 4		
PGA 398	Internship	3
Hours		3
Total Hours		133

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Financial Economics Option

1. Economics students will predict the effects of various events on the economy, financial markets, individuals, or firms, through knowledge of macroeconomic concepts and models.
2. Economics students will evaluate how firms and consumers interact in markets, in order to understand why economic decisions have certain outcomes.
3. Economics students will conduct an empirical study about the relationships between various factors.

4. Graduating Economics students will develop a thesis regarding an economics topic, critically evaluate the literature on that topic, and evaluate the topic through an empirical analysis.
5. Economics students will evaluate the policy options available to governments with regards to economic and financial stabilization and how these policy choices impact organizations.
6. Economics students in ECON 352 will predict what will happen to markets, firms, and consumers based on news events, through the analysis of microeconomic models.

PGA Golf Management Option

1. 90% of graduating PGM students will know core golf business content in golf management as shown by passing the PGA graded level 3 Facility Management exam.
2. 90% of graduating PGM students will apply knowledge of golf instructions as through PGA graded tests and work experience portfolios.
3. 90% of PGM graduating students will demonstrate golf skills required for PGA membership.

Business Leadership Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (<https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/>)).

Code	Title	Hours
ACCT 482	Enterprise Accounting	3
MHR 310	Leading Organizations and People	3
MHR 312	Applied Business Leadership	3
MIS 440	Data Visualization for Managerial Decision Making	3
Total Hours		12

Courses to total 12 credits for this certificate.

- Students completing the Business Leadership certificate will demonstrate understanding the interrelatedness of forecasts and assumptions regarding revenues, costs, and financing on financial statements. (ACCT 482)
- Students completing the Business Leadership certificate will demonstrate understanding the underlying principles of leading individuals, teams, and organizations. (MHR 310).
- Students completing the Business Leadership certificate will use experiences provided by and guided by the course to construct and articulate the impact of their experiences on their understanding of course content. (MHR 312)
- Students completing the Business Leadership certificate will develop skill needed to communicate using visualization software. (MIS 440)

Business Minor

This minor is not open to students pursuing other college business options (e.g., foreign language/business option, music/business option, or students pursuing a major in the College of Business and Economics (p. 172)).

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select three or more courses from the following:		9
FIN 301	Financial Resources Management	
MHR 311	Introduction to Management	
MKTG 321	Marketing	
MIS 350	Managing Information	
OM 378	Project Management	
ENTR 414	Entrepreneurship	
Business Electives		
Select one of the following options:		6
Two Upper-Division Business Discipline Electives ¹		
BUS 190	Integrated Business and Value Creation (AND One Upper-Division Business Discipline Elective) ¹	
Total Hours		21-22

Courses to total 21 credits for this minor

1

Upper division course may be from any of the following prefixes: BUS (p. 555), ENTR (p. 614), FIN (p. 622), MHR (p. 682), MIS (p. 683), MKTG (p. 684), OM (p. 718).

Economics (B.A. or B.S.)

This program is offered through the College of Letters, Arts, and Social Sciences (p. 310).

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general College of Letters, Arts and Social Sciences requirements for the B.A. or B.S. degree, and:

Code	Title	Hours
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
ECON 453	Econometrics	3
ECON 490	Economic Theory and Policy	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select Upper-Division Economics Electives		12
Select one of the following:		3-4
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
MATH 275	Calculus III	
Select one of the following:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Total Hours		34-37

Courses to total 120 credits for this degree

Economics (B.A.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
	Humanistic and Artistic Ways of Knowing Course	3
	Elective Course	3
	ECON 201 OR ECON 272	3
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
	Oral Communication Course	3
	Scientific Ways of Knowing Course	4
	ECON 202 OR ECON 272	3
	MATH 160 OR MATH 170 OR MATH 175 OR MATH 275	4
Hours		17
Fall Term 2		Hours
ECON 351	Intermediate Macroeconomic Analysis	3
	Scientific Ways of Knowing Course	4
	STAT 251 OR STAT 301	3
	FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101	4
Hours		14
Spring Term 2		Hours
ECON 352	Intermediate Microeconomic Analysis	3
	American Diversity Course	3
	Social and Behavioral Ways of Knowing Course	3
	Humanistic and Artistic Ways of Knowing Course	3
	FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102	4
Hours		16
Fall Term 3		Hours
ECON 453	Econometrics	3
	International Course	3
	UPDV Economics, Major Elective Course	3
	B.A. Course Requirement	3
	FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4
Hours		16
Spring Term 3		Hours
	UPDV Economics, Major Elective Course	3
	Elective Course	2
	B.A. Course Requirement	3
	B.A. Course Requirement	3
	FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Hours		15
Fall Term 4		Hours
	UPDV Economics, Major Elective Course	3
	Elective Course	3
	Elective Course	3
	Elective Course	3
	Elective Course	3
Hours		15
Spring Term 4		Hours
ECON 490	Economic Theory and Policy	3
	UPDV Economics, Major Elective Course	3
	Elective Course	3
	Elective Course	3
Hours		12
Total Hours		120

Economics (B.S.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3

	Humanistic and Artistic Ways of Knowing Course	3
	Elective Course	3
	ECON 201 OR ECON 272	3
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
	Oral Communication Course	3
	Scientific Ways of Knowing Course	4
	ECON 202 OR ECON 272	3
	MATH 160 OR MATH 170 OR MATH 175 OR MATH 275	4
Hours		17
Fall Term 2		Hours
ECON 351	Intermediate Macroeconomic Analysis	3
	Scientific Ways of Knowing Course	4
	B.S. Course Requirement	3
	Elective Course	3
	STAT 251 OR STAT 301	3
Hours		16
Spring Term 2		Hours
ECON 352	Intermediate Microeconomic Analysis	3
	American Diversity Course	3
	Social and Behavioral Ways of Knowing Course	3
	Humanistic and Artistic Ways of Knowing Course	3
	B.S. Course Requirement	3
Hours		15
Fall Term 3		Hours
ECON 453	Econometrics	3
	International Course	3
	UPDV Economics, Major Elective Course	3
	B.S. Course Requirement	3
	B.S. Course Requirement	3
Hours		15
Spring Term 3		Hours
	UPDV Economics, Major Elective Course	3
	Elective Course	3
	Elective Course	3
	Elective Course	3
	Elective Course	3
Hours		15
Fall Term 4		Hours
	UPDV Economics, Major Elective Course	3
	Elective Course	3
	Elective Course	3
	Elective Course	3
	Elective Course	3
Hours		15
Spring Term 4		Hours
ECON 490	Economic Theory and Policy	3
	UPDV Economics, Major Elective Course	3
	Elective Course	3
	Elective Course	3
Hours		12
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students exhibit comprehension of microeconomics by analyzing the effects of events on markets, firms, and consumers.
2. Students exhibit comprehension of macroeconomics by analyzing the effects of shocks on the economy and critically evaluating public policies.
3. Students can synthesize knowledge and evaluate theory through empirical research methods.
4. Students can write a research thesis that demonstrates analytical reasoning and critical thinking.
5. Students can demonstrate knowledge of specialized fields of economics.

Economics Minor

This academic minor is offered through the College of Letters, Arts, and Social Sciences (p. 310).

Code	Title	Hours
ECON 351	Intermediate Macroeconomic Analysis	3
ECON 352	Intermediate Microeconomic Analysis	3
Select one of the following:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Economic Electives		
Select 8-10 credits of Economics Electives		8-10
Total Hours		18-22

Courses to total 20 credits for this minor

Entrepreneurship Minor

The Entrepreneurship Minor is 18 credits. All students will take ENTR 414, ENTR 415, and several of the short courses. They will have options related to their startup interests, and all will compete in multiple regional and national pitch and business plan competitions to secure seed funding for their startup ideas.

Code	Title	Hours
ENTR 414	Entrepreneurship	3
ENTR 415	New Venture Creation	3
Technical Elective (from major field of study)		3
AGEC 478	Advanced Agribusiness Management	
ARCH 475	Professional Practice	
ART 410	Professional Practices	
ART 490	BFA Art/Design Studio	
BE 478	Engineering Design I	
BE 479	Engineering Design II	
BUS 490	Strategic Management	
CHE 451	Environmental Management and Design	
CS 481	CS Senior Capstone Design II	
ECE 480	EE Senior Design I	
ECE 481	EE Senior Design II	
ECE 482	Computer Engineering Senior Design I	
ECE 483	Computer Engineering Senior Design II	
FCS 496	Internship:Fashion Business	
GEOG 360	Population Dynamics and Distribution	

GEOG 385	Foundations of GIS	
ME 410	Principles of Lean Manufacturing	
ME 426	Mechanical Systems Design II	
MIS 353	Application Development	
MKTG 428	Marketing Management	
Choose 9 credits from the following courses:		9
ENTR 314	Startup Innovation and Ideation	
ENTR 315	Feasibility Analysis	
ENTR 316	Business Model Design	
ENTR 317	Intellectual Property and Legal Issues for New Ventures	
ENTR 318	Prototype Development	
ENTR 319	New Venture Marketing	
ENTR 320	New Venture Funding	
ENTR 321	Accounting for Entrepreneurs	
ENTR 322	Social Ventures	
ENTR 323	Launching Tech Ventures	
Total Hours		18

Entrepreneurship Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (0-10-a (p. 94)).

Code	Title	Hours
ENTR 414	Entrepreneurship	3
Select 6 credit hours of Entrepreneurship Electives		6
ENTR 314	Startup Innovation and Ideation	
ENTR 315	Feasibility Analysis	
ENTR 316	Business Model Design	
ENTR 317	Intellectual Property and Legal Issues for New Ventures	
ENTR 318	Prototype Development	
ENTR 319	New Venture Marketing	
ENTR 320	New Venture Funding	
ENTR 321	Accounting for Entrepreneurs	
ENTR 322	Social Ventures	
ENTR 323	Launching Tech Ventures	
ENTR 415	New Venture Creation	
Select one of the following Technical Electives:		3
AGEC 478	Advanced Agribusiness Management	
ARCH 475	Professional Practice	
ART 410	Professional Practices	
ART 490	BFA Art/Design Studio	
BE 478	Engineering Design I	
BE 479	Engineering Design II	
MIS 353	Application Development	
MKTG 428	Marketing Management	
BUS 490	Strategic Management	
CHE 451	Environmental Management and Design	
CHE 452	Environmental Management and Design	
CS 481	CS Senior Capstone Design II	

ECE 480	EE Senior Design I
ECE 481	EE Senior Design II
ECE 482	Computer Engineering Senior Design I
ECE 483	Computer Engineering Senior Design II
FCS 496	Internship:Fashion Business
GEOG 360	Population Dynamics and Distribution
GEOG 385	Foundations of GIS
ME 410	Principles of Lean Manufacturing
ME 426	Mechanical Systems Design II
Total Hours	12

Courses to total 12 credits for this certificate

1. Idaho Entrepreneurs student-participants will demonstrate an integrated understanding of business and entrepreneurial principles and apply their knowledge to entrepreneurial opportunities.
2. Idaho Entrepreneurs student-participants will use appropriate tools of analysis to identify and address problems and opportunities in the marketplace, and be successfully propose feasible business ideas and models with real potential.
3. Idaho Entrepreneurs student-participants will show the ability to effectively develop and communicate business models, plans, and pitches in funding and competition venues.
4. Idaho Entrepreneurs students-participants will demonstrate the ability to interact effectively and professionally as part of new venture teams with students from different colleges, backgrounds, abilities, and values.

Finance (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the college requirements, and the following:

Code	Title	Hours
College of Business & Economics Requirements (p. 172)		54-57
Major Requirements		28
Total Hours		82-85

Major Requirements

Code	Title	Hours
ACCT 315	Intermediate Financial Accounting I	3
FIN 302	Intermediate Financial Management	3
FIN 407	Financial Institutions	3
or FIN 483	Topics in Financial Analysis	
FIN 409	Problems in Financial Management	3
or FIN 469	Risk and Insurance	

Finance Electives

Select three of the following:		9
FIN 408	Security Analysis	
FIN 463	Portfolio Management	
FIN 464	Derivatives and Risk Management	
FIN 465	Introduction to Market Trading	

Supporting Electives

Select two of the following:		6
ACCT 325	Intermediate Financial Accounting II	
ACCT 385	Cost and Management Accounting	

ACCT 415	Advanced Financial Accounting & Reporting
ACCT 483	Fundamentals of Federal Taxation
ECON 343	Money and Banking
ECON 351	Intermediate Macroeconomic Analysis
ECON 352	Intermediate Microeconomic Analysis
ECON 407	Public Finance
ECON 453	Econometrics
ENTR 414	Entrepreneurship
ENTR 415	New Venture Creation
FIN 381	International Finance
FIN 466	Market Trading Strategies
MKTG 421	Marketing Research & Analysis
MKTG 427	Services Marketing
MKTG/FSP 495	Product Development and Brand Management
OM 378	Project Management
OM 439	Systems and Simulation
OM 456	Enterprise Quality Management
STAT 431	Statistical Analysis
Two of the following may be used if not used to satisfy the above Finance elective:	
FIN 408	Security Analysis
FIN 463	Portfolio Management
FIN 464	Derivatives and Risk Management
FIN 465	Introduction to Market Trading

Total Hours **27**

Courses to total 120 credits for this degree

A. PGA Golf Management Option

Required course work includes all Finance requirements and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship	1-3
PGA 385	PGA Golf Management III	3
PGA 398	Internship ¹	6
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		24-26

¹

PGA 385 or PGA 398 can be used to cover the two supporting electives (6 cr).

Courses to total 129 credits for this degree

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status

General Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
MATH 160 OR MATH 170		4
Hours		16
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
STAT 251	Statistical Methods	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MKTG 321	Marketing	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		Hours
FIN 301	Financial Resources Management	3
MHR 310	Leading Organizations and People	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
American Diversity Course		3
Hours		15
Spring Term 3		Hours
ACCT 315	Intermediate Financial Accounting I	3
FIN 302	Intermediate Financial Management	3
PHIL 208	Business Ethics	3
Supporting, Major Elective Course		3
UPDV Economics, Major Elective Course		3
Hours		15
Fall Term 4		Hours
International Course		3
Supporting, Major Elective Course		3
FIN 408 OR FIN 463 OR FIN 464 OR FIN 465		3
FIN 408 OR FIN 463 OR FIN 464 OR FIN 465		3
FIN 409 OR FIN 469		3
Hours		15
Spring Term 4		Hours
BUS 490	Strategic Management	3
Elective Course		3
FIN 408 OR FIN 463 OR FIN 464 OR FIN 465		3
FIN 407 OR FIN 483		3
Hours		12
Total Hours		120

PGA Golf Management Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PGA 103	Introduction to PGA Golf Management	2
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
PGA 150	PGA Golf Management I	3
Scientific Ways of Knowing Course		4
Social and Behavioral Ways of Knowing Course		3
MATH 160 OR MATH 170		4
Hours		17
Summer Term 1		Hours
PGA 298	Internship	2
Hours		2
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PGA 251	PGA Golf Management II	3
STAT 251 OR STAT 301		3
Hours		15
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MKTG 321	Marketing	3
RSTM 105	Teaching Golf I	2
Hours		14
Summer Term 2		Hours
PGA 298	Internship	2
Hours		2
Fall Term 3		Hours
FIN 301	Financial Resources Management	3
MHR 310	Leading Organizations and People	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
RSTM 205	Teaching Golf II	2
Hours		14
Spring Term 3		Hours
ACCT 315	Intermediate Financial Accounting I	3
FIN 302	Intermediate Financial Management	3
PGA 385	PGA Golf Management III	3
PHIL 208	Business Ethics	3
American Diversity Course		3
Hours		15
Summer Term 3		Hours
PGA 398	Internship	3
Hours		3
Fall Term 4		Hours
UPDV Economics, Major Elective Course		2
Scientific Ways of Knowing Course		4
FIN 409 OR FIN 469		3
ENGL 207 OR ENGL 208 OR ENGL 313 OR PHIL 201		3
FIN 408 OR FIN 463 OR FIN 464 OR FIN 465		3
Hours		15

Spring Term 4		
BUS 490	Strategic Management	3
RSTM 305	Teaching Golf III	2
International Course		3
FIN 407 OR FIN 483		3
FIN 408 OR FIN 463 OR FIN 464 OR FIN 465		3
FIN 408 OR FIN 463 OR FIN 464 OR FIN 465		3
Hours		17
Summer Term 4		
PGA 398	Internship	3
Hours		3
Total Hours		134

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will demonstrate an understanding of financial investment topics.
2. Students will demonstrate a sound understanding of the insurance industry including the insurance market, insurance industry operations, the institutional aspects of insurance, an understanding insurance pricing, risk management process and application, and statistical analysis.

General Management (M.B.A.) Master of Business Administration. Major in General Management.

The University of Idaho Executive MBA is ideal for experienced professionals who want to build their leadership and business skills without interrupting their careers.

Idaho Executive MBA at a Glance

Full-time, 22-months, and AACSB accredited

Program Focus

Integrative management with an emphasis on managing and leading organizations

Cohort Model

Students enter as a group and learn together.

Faculty

University of Idaho professors and other experts

Class Location

Coeur d'Alene once a month for two and a half days (Thursday, Friday, and a half-day Saturday)

Fees

Contact Executive Education (<https://www.uidaho.edu/emba/>) in the College of Business for current fee information.

1. EMBA graduates will demonstrate cross-functional understanding in business processes and decisions.

2. EMBA graduates will use appropriate tools of analysis to analyze and communicate business problems.
3. EMBA graduates will use appropriate tools of analysis to analyze business situations and recommend appropriate action.
4. EMBA graduates will experience transformational experiences that foster a better understanding of self, relationships, and global perspectives.
5. EMBA graduates will interact effectively and professionally with people of varied backgrounds, abilities, and values.

International Business Minor

Note: This minor is limited to students majoring in the College of Business and Economics.

Code	Title	Hours
BUS 490	Strategic Management	3
ECON 446	International Economics	3
FIN 381	International Finance	3
MKTG 482	International Marketing	3
POLS 237	Introduction to International Politics	3
Select one of the following courses or another elective approved by the International Business Minor Advisor:		3
ECON 447	International Development Economics	
FLEN 307	Institutions of the European Union	
MHR 418	Managing Organization Design and Leading Changes	
POLS 440	International Organizations and International Law	
Total Hours		18

Foreign language mastery is required equivalent to completion of the introductory and intermediate courses, and an upper-division course in a language. A semester of study and/or internship in another country is recommended. CBE students currently have direct access to academic programs at Växjö University (Sweden), Ecole Supérieure de Commerce de Chambéry (France), Pontificia Universidad Católica del Ecuador, Griffith University (Australia), Fachhochschule für Technik und Wirtschaft Berlin (Germany), University of Zaragoza (Spain), Haagse Hogeschool (The Netherlands), the Southern Denmark Business School, and the University of Newcastle upon Tyne (United Kingdom). CBE students also have access to programs in Australia, Chile, France, Italy, and Spain through the University Studies Abroad Consortium, and to numerous schools in various countries through the International Student Exchange Program. Internships are developed on an ad hoc basis.

Courses to total 18 credits for this minor

Management and Human Resources (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the college requirements, and:

Code	Title	Hours
College of Business Requirements (p. 172)		54-57
Major Requirements		12-27
Total Hours		66-84

Major Requirements

Code	Title	Hours
Emphases		
Select one of the following emphases:		21-27
	Management (p. 191)	
	Human Resources Management (p. 191)	
	PGA Golf Management (p. 192)	
	Entrepreneurship and Small Business Management (p. 191)	
Total Hours		21-27

A. Management Emphasis

Code	Title	Hours
Management Elective		
MHR 411	Acquiring Human Capital	3
MHR 416	Managing Reward Systems	3
MHR 417	Deploying and Developing Human Capital	3
MHR 418	Managing Organization Design and Leading Changes	3
MHR 441	Maintaining Employee and Labor Relations	3
Cross-Functional Management Electives		9
Select THREE 300- or 400-level CBE courses from at least three different functional areas (e.g., ACCT, ECON, ENTR, FIN, MIS, MKTG, OM., PGA)		
Total Hours		24

Courses to total 120 credits for this degree

B. Human Resources Management Emphasis

Code	Title	Hours
MHR 411	Acquiring Human Capital	3
MHR 416	Managing Reward Systems	3
MHR 417	Deploying and Developing Human Capital	3
MHR 418	Managing Organization Design and Leading Changes	3
MHR 441	Maintaining Employee and Labor Relations	3
HR Decision-Making Elective		
Select one course from the following:		3-4
ACCT 385	Cost and Management Accounting	
ACCT 482	Enterprise Accounting	
ECON 453	Econometrics	
GEOG 385	Foundations of GIS	
MIS 353	Application Development	
MIS 355	Systems Analysis & Administration	
MIS 453	Database Design	
MIS 455	Data Management for Big Data	
MKTG 421	Marketing Research & Analysis	
OM 439	Systems and Simulation	
ORGS 444	Methods and Analysis in Organizational Science	
PSYC 218	Introduction to Research in the Behavioral Sciences	
PSYC 416	Industrial/Organizational Psychology	

PSYC 430	Tests and Measurements	
Specialized Electives		
Select one course from the following:		3-4
AOLL 560	Career Development in Organizations	
COMM 347	Persuasion	
COMM 410	Conflict Management	
COMM 355	Organizational Communication	
CTE 472	Teaching and Learning in Organizations	
ECON 441	Labor Economics	
EDCI 301	Learning, Development, and Assessment	
INDT 362	Behavior Based Safety	
JAMM 350	Public Relations Writing and Production	
MHR 398	Internship	
MIS 454	Issues in Information Systems	
ORGS 305	Nonprofit Organizations	
PGA 251	PGA Golf Management II	
PGA 385	PGA Golf Management III	
POLS 451	Public Administration	
PSYC 390	Psychology of Learning	
PSYC 440	Psychology of Judgement and Decision Making	
PSYC 541	Human Relations in the Workplace	
SOC 201	Introduction to Inequity and Justice	
Total Hours		21-23

Courses to total 120 credits for this degree

C. Entrepreneurship and Small-Business Management Emphasis²

Code	Title	Hours
MHR 311	Introduction to Management	3
Choose three courses from the following:		9
MHR 411	Acquiring Human Capital	
MHR 416	Managing Reward Systems	
MHR 417	Deploying and Developing Human Capital	
MHR 418	Managing Organization Design and Leading Changes	
MHR 441	Maintaining Employee and Labor Relations	
Complete the requirements for the following: ¹		12
Entrepreneurship Undergraduate Academic Certificate (p. 187)		
Total Hours		24

¹

In addition to fulfilling the College of Business and Economics core requirement, for this emphasis BUS 490 may be used to fulfill the Technical elective in the Entrepreneurship Undergraduate Academic Certificate (p. 187) requirements.

²

Completing the requirements for this emphasis will also fulfill the requirements for the Small Business Management Undergraduate Academic Certificate (<https://catalog.uidaho.edu/colleges-related-units/business-economics/business/small-business-management-undergraduate-academic-certificate/>).

Courses to total 120 credits for this degree

D. PGA Golf Management Option²

Required course work includes all Management and Human Resources requirements, one of the Management and Human Resources emphases, and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship	1-3
PGA 385	PGA Golf Management III	3
PGA 398	Internship	1-3
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		19-23

1

PGA 251 and PGA 385, together, can be used to meet the requirement for the Specialized Elective or the Marketing & Entrepreneurship Elective.

2

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status.

Courses to total 129 credits for this degree

Management Emphasis

Code	Title	Hours
Fall Term 1		
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
American Diversity Course		3
Elective Course		1
Hours		14
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PHIL 208	Business Ethics	3
STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		
FIN 301	Financial Resources Management	3

MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		
MHR 411	Acquiring Human Capital	3
MHR 417	Deploying and Developing Human Capital	3
UPDV Economics, Major Elective Course		3
Elective Course		3
MHR 416 OR MHR 418 OR MHR 441		3
Hours		15
Fall Term 4		
Elective Course		3
Elective Course		3
INDT 362 OR OM 378 OR OM 439 OR OM 456 OR OM 470 OR OM 472 OR PGA 386 OR PSYC 440		3
AGEC 333 OR ENTR 414 OR ENTR 415 OR MKTG 324 OR MKTG 420 OR MKTG 421 OR MKTG 422 OR MKTG 424 OR MKTG 425 OR MKTG 426 OR MKTG 427 OR MKTG 482 OR MKTG 495 OR PGA 251 OR PGA 385		3
ACCT 305 OR ACCT 315 OR ACCT 385 OR ACCT 440 OR ACCT 482 OR ACCT 483 OR ECON 407 OR FIN 302 OR FIN 381		3
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
International Course		3
Elective Course		3
Elective Course		3
ACCT 305 OR GEOG 385 OR MIS 353 OR MIS 355 OR MIS 452 OR MIS 453 OR MIS 454 OR MIS 455		3
Hours		15
Total Hours		120

Human Resources Management Emphasis

Code	Title	Hours
Fall Term 1		
COMM 101	Fundamentals of Oral Communication	3
BUS 190	Integrated Business and Value Creation	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Scientific Ways of Knowing Course		4
Elective Course		1
Hours		14
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
ECON 201	Principles of Macroeconomics	3
BLAW 265	Legal Environment of Business	3
STAT 251	Statistical Methods	3
PHIL 208	Business Ethics	3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
ECON 202	Principles of Microeconomics	3
BUS 354	Business Analytics	3
MHR 310	Leading Organizations and People	3

ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		
MHR 411	Acquiring Human Capital	3
MHR 418	Managing Organization Design and Leading Changes	3
UPDV Economics, Major Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Fall Term 4		
MHR 417	Deploying and Developing Human Capital	3
MHR 441	Maintaining Employee and Labor Relations	3
Decision Making, Major Elective Course		3
Specialized, Major Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
MHR 416	Managing Reward Systems	3
International Course		3
Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

Entrepreneurship and Small-Business Management Emphasis

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
American Diversity Course		3
Elective Course		1
Hours		14
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
STAT 251	Statistical Methods	3
PHIL 208	Business Ethics	3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3

ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		
MHR 411	Acquiring Human Capital	3
MHR 417	Deploying and Developing Human Capital	3
MHR 418	Managing Organization Design and Leading Changes	3
UPDV ECON, Major Elective Course		3
Elective Course		3
Hours		15
Fall Term 4		
ACCT 482	Enterprise Accounting	3
ENTR 414	Entrepreneurship	3
MHR 311	Introduction to Management	3
Specialized, Major Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		
ENTR 415	New Venture Creation	3
BUS 490	Strategic Management	3
Specialized, Major Elective Course		3
International Course		3
Elective Course		3
Hours		15
Total Hours		120

PGA Golf Management Emphasis

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PGA 103	Introduction to PGA Golf Management	2
Scientific Ways of Knowing Course		4
Hours		18
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
PGA 150	PGA Golf Management I	3
Scientific Ways of Knowing Course		4
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Hours		16
Summer Term 1		
PGA 298	Internship	2
Hours		2
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PGA 251	PGA Golf Management II	3
STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3

BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
RSTM 105	Teaching Golf I	2
Hours		14
Summer Term 2		
PGA 298	Internship	2
Hours		2
Fall Term 3		
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
RSTM 205	Teaching Golf II	2
Hours		14
Spring Term 3		
MHR 411	Acquiring Human Capital	3
MHR 417	Deploying and Developing Human Capital	3
PGA 385	PGA Golf Management III	3
UPDV Economics, Major Elective Course		2
MHR 416 OR MHR 418 OR MHR 441		3
Hours		14
Summer Term 3		
PGA 398	Internship	3
Hours		3
Fall Term 4		
Social and Behavioral Ways of Knowing Course		3
INDT 362 OR OM 378 OR OM 439 OR OM 456 OR OM 470 OR OM 472 OR PGA 386 OR PSYC 440		3
AGEC 333 OR ENTR 414 OR ENTR 415 OR MKTG 324 OR MKTG 420 OR MKTG 421 OR MKTG 422 OR MKTG 424 OR MKTG 425 OR MKTG 426 OR MKTG 427 OR MKTG 482 OR MKTG 495 OR PGA 251 OR PGA 385		3
ACCT 305 OR ACCT 315 OR ACCT 385 OR ACCT 440 OR ACCT 482 OR ACCT 483 OR ECON 407 OR FIN 302 OR FIN 381		3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
PHIL 208	Business Ethics	3
RSTM 305	Teaching Golf III	2
International Course		3
ACCT 305 OR GEOG 385 OR MIS 353 OR MIS 355 OR MIS 452 OR MIS 453 OR MIS 454 OR MIS 455		3
Hours		14
Summer Term 4		
PGA 398	Internship	3
Hours		3
Total Hours		130

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Entrepreneurship and Small-Business Management Emphasis

1. Students will identify recruiting best practices (MHR 411).
2. Students will identify training best practices (MHR 417).

Marketing (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the college requirements, and:

Code	Title	Hours
College of Business & Economics Requirements (p. 172)		54-57
Major Requirements		24-44
Total Hours		78-101

Major Requirements

Code	Title	Hours
MKTG 324	Consumer Behavior	3
MKTG 421	Marketing Research & Analysis	3
MKTG 428	Marketing Management	3
Emphases		
Select one of the following emphases:		15-35
General Marketing (p. 194)		
Sales Management (p.)		
Entrepreneurship (p. 195)		
PGA Golf Management (p. 195)		
Marketing Analytics (p. 195)		
Total Hours		24-44

A. General Marketing Emphasis

Code	Title	Hours
Product Elective		3
MKTG 427	Services Marketing	
	or MKTG 49€Product Development and Brand Management	
Pricing Requirement		3
MKTG 424	Pricing Strategy and Tactics	
Place Elective		3
MKTG 425	Retail Distribution Management	
	or MKTG 42€Marketing Channels Management	
Promotions Elective		3
MKTG 420	Integrated Marketing Communication	
	or MKTG 42¿Sales Management	
Business Elective		3
One 300-400 level CBE course		
Total Hours		15

Courses to total 120 credits for this degree

B. Sales Management Emphasis

Code	Title	Hours
BUS 303	Business Negotiations	3
MKTG 422	Sales Management	3
MKTG 432	Advanced Sales Management	3
Sales Electives		

Select 6 credits from the following 6

MHR 417	Deploying and Developing Human Capital	
MKTG 420	Integrated Marketing Communication	
MKTG 423	Digital Marketing Strategy	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Management	
MKTG 426	Marketing Channels Management	
OM 470	Supply Chain Analytics	

Select three credits from the following 3

BUS 429	Vandal Solutions	
MKTG 398	Internship	

Total Hours 18

Courses to total 120 credits for this degree.

C. Entrepreneurship Emphasis

Code	Title	Hours
ACCT 482	Enterprise Accounting	3
ENTR 414	Entrepreneurship	3
ENTR 415	New Venture Creation	3

Marketing Electives

Select one course from the following: 3

MKTG 420	Integrated Marketing Communication	
MKTG 422	Sales Management	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Management	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
MKTG 482	International Marketing	
MKTG 495	Product Development and Brand Management	

Entrepreneurship Practicum/Internship/Vandal Solutions

Select 3 credits from the following: 3

BUS 429	Vandal Solutions (Max 6 credits)	
MKTG 398	Internship	

Business Elective 3

One 300-400 level CBE course

Total Hours 18

Courses to total 120 credits for this degree

D. PGA Golf Management Emphasis

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship (Max 6 credits)	4
PGA 385	PGA Golf Management III	3
PGA 398	Internship (Max 6 credits)	6
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2

Pricing Requirement 3

MKTG 424 Pricing Strategy and Tactics²

Place Elective 3

MKTG 425	Retail Distribution Management or MKTG 426 Marketing Channels Management	
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Product Elective 3

MKTG 427	Services Marketing or MKTG 495 Product Development and Brand Management	
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Promotions Elective 3

MKTG 420	Integrated Marketing Communication or MKTG 422 Sales Management	
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Total Hours 39

Courses to total 129 credits for this degree

Students must pass the PGA Player Ability Test.

Students must have a 12.0 handicap or better to enter this program.

Students must also be a U.S. citizen to be eligible for PGA membership.

E. Marketing Analytics Emphasis

Code	Title	Hours
MKTG 431	Marketing Analytics	3
STAT 422	Survey Sampling Methods	3
STAT 431	Statistical Analysis	3

Select two of the following: 6

ANTH 416	Qualitative Social Science Methods	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
MATH 183	Introduction to Data Science in Python	
MATH 330	Linear Algebra	
MIS 455	Data Management for Big Data	
PSYC 430	Tests and Measurements	
STAT 407	Experimental Design or STAT 507 Experimental Design	
STAT 418	Multivariate Analysis	
STAT 426	SAS Programming	
STAT 427	R Programming	
STAT 436	Applied Regression Modeling or STAT 516 Applied Regression Modeling	
STAT 514	Nonparametric Statistics	

Marketing Electives

Select one course from the following: 3

MKTG 420	Integrated Marketing Communication	
MKTG 422	Sales Management	
MKTG 423	Digital Marketing Strategy	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Management	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
MKTG 482	International Marketing	
MKTG 495	Product Development and Brand Management	

Total Hours 18

Courses to total 120 credits for this degree

General Marketing Emphasis

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
American Diversity Course		3
Elective Course		1
Hours		14
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PHIL 208	Business Ethics	3
STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		Hours
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		Hours
MKTG 324	Consumer Behavior	3
UPDV Economics, Major Elective Course		3
Elective Course		3
Elective Course		3
MKTG 420 OR MKTG 422		3
Hours		15
Fall Term 4		Hours
MKTG 421	Marketing Research & Analysis	3
UPDV CBE, Major Elective Course		3
Elective Course		3
MKTG 427 OR MKTG 495		3
MKTG 425 OR MKTG 426		3
Hours		15
Spring Term 4		Hours
BUS 490	Strategic Management	3
MKTG 428	Marketing Management	3
MKTG 424	Pricing Strategy and Tactics	3
Elective Course		3
International Course		3
Hours		15
Total Hours		120

Sales Management Emphasis

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
American Diversity Course		3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Elective Course		1
Hours		14
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PHIL 208	Business Ethics	3
STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		Hours
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		Hours
MKTG 324	Consumer Behavior	3
BUS 303	Business Negotiations	3
UPDV Economics, Major Elective Course		3
Elective Course		3
MHR 417 OR MKTG 420 OR MKTG 423 OR MKTG 424 OR MKTG 425 OR MKTG 426 OR OM 470 OR Sales Practicum/Sales Internship		3
Hours		15
Fall Term 4		Hours
MKTG 421	Marketing Research & Analysis	3
MKTG 422	Sales Management	3
Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		Hours
BUS 490	Strategic Management	3
MKTG 428	Marketing Management	3
MKTG 432	Advanced Sales Management	3
International Course		3
MHR 417 OR MKTG 420 OR MKTG 423 OR MKTG 424 OR MKTG 425 OR MKTG 426 OR OM 470 OR Sales Practicum/Sales Internship		3
Hours		15
Total Hours		120

Entrepreneurship Emphasis

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Scientific Ways of Knowing Course		4
Elective Course		1
Hours		14
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PHIL 208	Business Ethics	3
STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		Hours
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		Hours
MKTG 324	Consumer Behavior	3
UPDV Economics, Major Elective Course		3
Elective Course		3
Elective Course		3
BUS 429 OR MKTG 398		3
Hours		15
Fall Term 4		Hours
ACCT 482	Enterprise Accounting	3
ENTR 414	Entrepreneurship	3
MKTG 421	Marketing Research & Analysis	3
Elective Course		3
BUS 429 OR MKTG 420 OR MKTG 422 OR MKTG 424 OR MKTG 425 OR MKTG 426 OR MKTG 427 OR MKTG 482 OR MKTG 495		3
Hours		15
Spring Term 4		Hours
BUS 490	Strategic Management	3
ENTR 415	New Venture Creation	3
MKTG 428	Marketing Management	3
International Course		3
UPDV CBE, Major Elective Course		3
Hours		15
Total Hours		120

PGA Golf Management Emphasis

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PGA 103	Introduction to PGA Golf Management	2
Scientific Ways of Knowing Course		4
Hours		18
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
PGA 150	PGA Golf Management I	3
Humanistic and Artistic Ways of Knowing Course		3
4 credits Scientific Ways of Knowing Course		4
American Diversity Course		3
Hours		16
Summer Term 1		Hours
PGA 298	Internship	2
Hours		2
Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PGA 251	PGA Golf Management II	3
STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
RSTM 105	Teaching Golf I	2
Hours		14
Summer Term 2		Hours
PGA 298	Internship	2
Hours		2
Fall Term 3		Hours
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
RSTM 205	Teaching Golf II	2
Hours		14
Spring Term 3		Hours
MKTG 324	Consumer Behavior	3
PGA 385	PGA Golf Management III	3
MKTG 424	Pricing Strategy and Tactics	3
UPDV ECON, Major Elective Course		2
MKTG 420 OR MKTG 422		3
Hours		14
Summer Term 3		Hours
PGA 398	Internship	3
Hours		3
Fall Term 4		Hours
MKTG 421	Marketing Research & Analysis	3
Social and Behavioral Ways of Knowing Course		3
MKTG 425 OR MKTG 426		3
MKTG 427 OR MKTG 495		3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15

Spring Term 4		
BUS 490	Strategic Management	3
RSTM 305	Teaching Golf III	2
MKTG 428	Marketing Management	3
PHIL 208	Business Ethics	3
International Course		3
Hours		14
Summer Term 4		
PGA 398	Internship	3
Hours		3
Total Hours		130

Marketing Analytics Emphasis

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
STAT 251	Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Hours		13
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3
PHIL 208	Business Ethics	3
Analytics Elective, Major Elective Course		4
Hours		16
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
MHR 310	Leading Organizations and People	3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		
MKTG 324	Consumer Behavior	3
STAT 422	Survey Sampling Methods	3
UPDV Economics, Major Elective Course		3
Elective Course		3
American Diversity Course		3
Hours		15
Fall Term 4		
MKTG 421	Marketing Research & Analysis	3
STAT 431	Statistical Analysis	3
MKTG 420 OR MKTG 422 OR MKTG 423 OR MKTG 424 OR MKTG 425 OR MKTG 426 OR MKTG 427 OR MKTG 482 OR MKTG 495		3
Elective Course		3

Analytics Elective, Major Elective Course	3	
Hours		15
Spring Term 4		
BUS 490	Strategic Management	3
MKTG 428	Marketing Management	3
MKTG 431	Marketing Analytics	3
International Course		3
Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

General Marketing Emphasis

1. Students understand the difference between marketing strategy and marketing mix (MKTG 428).
2. Students will develop working hypotheses and statistical tests for marketing problems (MKTG 421).
3. Students will determine the information needed for decision making (MKTG 421).

Sales Management Emphasis

1. Students will demonstrate skills in designing and executing sales management programs.
2. Students will demonstrate skills in designing and executing consumer research to address specific marketing questions.
3. Students will recognize the difference between marketing strategy and marketing mix.

Entrepreneurship Emphasis

1. Students will recall gathering and analyzing marketing data.
2. Students will recall the consumer behavior process.
3. Students will recall the product development process.
4. Students will recall promotional mix.
5. Students will recall how to determine price.
6. Students will recall how to determine appropriate channel.

PGA Golf Management Emphasis

1. Students will demonstrate an understanding of professional golf principles.

Marketing Analytics Emphasis

1. Students will demonstrate skills in designing and executing sales management programs.
2. Students will recognize the difference between marketing strategy and marketing mix.
3. Students will determine the appropriate level, scope, and depth of information required for decision making.
4. Students will apply quantitative analytical skills to assess and solve marketing problems/opportunities.
5. Students will prepare and analyze data, report the research results, and provide strategic marketing recommendations.

Marketing Minor

Code	Title	Hours
ECON 202	Principles of Microeconomics	3-4
or ECON 272	Foundations of Economic Analysis	
MKTG 321	Marketing	3
Select four courses from the following:		12
AGEC 302	Managerial Economics: Consumption & Markets	
AGEC 333	Introduction to Sales	
CTE 413	Retail Merchandising for Marketing Education	
ECON 453	Econometrics	
FCS 448	Consumer Economic Issues	
JAMM 466	Media Campaign Strategy	
MKTG 324	Consumer Behavior	
MKTG 420	Integrated Marketing Communication	
MKTG 421	Marketing Research & Analysis	
MKTG 422	Sales Management	
MKTG 423	Digital Marketing Strategy	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Management	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
MKTG/FSP 495	Product Development and Brand Management	
STAT 422	Survey Sampling Methods	
Total Hours		18-19

Courses to total 18 credits for this minor

Operations and Supply Chain Management (B.S.Bus.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the college requirements, and:

Code	Title	Hours
Colleges of Business & Economics Requirements (p. 172)		54-57
Major Requirements		25
Total Hours		79-82

Major Requirements

Code	Title	Hours
OM 378	Project Management	3
OM 439	Systems and Simulation	4
OM 456	Enterprise Quality Management	3
OM 470	Supply Chain Analytics	3
OM 472	Enterprise Planning and Scheduling	3
Select at least three courses from the following:		9
ENVS 428	Pollution Prevention	
ME 410	Principles of Lean Manufacturing	
STAT 431	Statistical Analysis	
One 300-400 level CBE course ¹		

One Business, Culture, Economics or Language class ²

Total Hours	25
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¹
300-400 level CBE: Excluding MHR 311 and courses taken to complete the CBE Common Requirements.

²
Business, Culture, Economics, Language class must include a significant international experience component.

Courses to total 120 credits for this degree

A. PGA Golf Management Option

Required course work includes all Operations Management requirements and:

Code	Title	Hours
PGA 103	Introduction to PGA Golf Management	2
PGA 150	PGA Golf Management I	3
PGA 251	PGA Golf Management II	3
PGA 298	Internship (Max 6 credits)	4
PGA 385	PGA Golf Management III	3
PGA 398	Internship (Max 6 credits) ¹	6
RSTM 105	Teaching Golf I	2
RSTM 205	Teaching Golf II	2
RSTM 305	Teaching Golf III	2
Total Hours		27

¹
PGA 385 or PGA 398 can be used to cover the (nine credits) of OM electives.

Students must have a 12.0 handicap or better to enter this program. International students can complete the degree requirements, but membership to the PGA of America requires US Citizenship or Resident Alien status.

Courses to total 129 credits for this degree

General Option

Fall Term 1	Hours
BUS 190 Integrated Business and Value Creation	3
COMM 101 Fundamentals of Oral Communication	3
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
Scientific Ways of Knowing Course	4
Hours	16
Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
American Diversity Course	3
Scientific Ways of Knowing Course	4
Elective Course	3
Hours	16
Fall Term 2	Hours
ACCT 201 Introduction to Financial Accounting	3
BLAW 265 Legal Environment of Business	3
ECON 201 Principles of Macroeconomics	3
PHIL 208 Business Ethics	3

STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
ECON 202	Principles of Microeconomics	3
Social and Behavioral Ways of Knowing Course		3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		15
Fall Term 3		
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MHR 310	Leading Organizations and People	3
MIS 350	Managing Information	3
OM 370	Introduction to Operations and Supply Chain Management	3
Hours		15
Spring Term 3		
OM 378	Project Management	3
OM 456	Enterprise Quality Management	3
Elective Course		3
Operations Management, Major Elective Course		3
UPDV Economics, Elective Course		3
Hours		15
Fall Term 4		
OM 439	Systems and Simulation	4
OM 472	Enterprise Planning and Scheduling	3
Operations Management, Major Elective Course		3
Elective Course		3
Hours		13
Spring Term 4		
BUS 490	Strategic Management	3
OM 470	Supply Chain Analytics	3
Operations Management, Major Elective Course		3
International Course		3
Elective Course		3
Hours		15
Total Hours		120

PGA Golf Management Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PGA 103	Introduction to PGA Golf Management	2
Scientific Ways of Knowing Course		4
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
PGA 150	PGA Golf Management I	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
American Diversity Course		3
Hours		16
Summer Term 1		
PGA 298	Internship	2
Hours		2
Fall Term 2		
ACCT 201	Introduction to Financial Accounting	3
BLAW 265	Legal Environment of Business	3
ECON 201	Principles of Macroeconomics	3

PGA 251	PGA Golf Management II	3
STAT 251	Statistical Methods	3
Hours		15
Spring Term 2		
ACCT 202	Introduction to Managerial Accounting	3
BUS 354	Business Analytics	3
COMM 101	Fundamentals of Oral Communication	3
ECON 202	Principles of Microeconomics	3
PHIL 208	Business Ethics	3
RSTM 105	Teaching Golf I	2
Hours		17
Summer Term 2		
PGA 298	Internship	2
Hours		2
Fall Term 3		
FIN 301	Financial Resources Management	3
MKTG 321	Marketing	3
MIS 350	Managing Information	3
MHR 310	Leading Organizations and People	3
OM 370	Introduction to Operations and Supply Chain Management	3
RSTM 205	Teaching Golf II	2
Hours		17
Spring Term 3		
OM 378	Project Management	3
OM 456	Enterprise Quality Management	3
PGA 385	PGA Golf Management III	3
UPDV Economics, Major Elective Course		2
Operations Management, Major Elective Course		3
Hours		14
Summer Term 3		
PGA 398	Internship	3
Hours		3
Fall Term 4		
OM 439	Systems and Simulation	4
OM 472	Enterprise Planning and Scheduling	3
Social and Behavioral Ways of Knowing Course		3
Operations Management, Major Elective Course		3
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317 OR PHIL 201		3
Hours		16
Spring Term 4		
BUS 490	Strategic Management	3
OM 470	Supply Chain Analytics	3
RSTM 305	Teaching Golf III	2
Operations Management, Major Elective Course		3
International Course		3
Hours		14
Summer Term 4		
PGA 398	Internship	3
Hours		3
Total Hours		134

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will develop and implement a program to improve the quality of organizational processes.

- Students will demonstrate an understanding of the use of both “soft” project management skills (e.g., stakeholder management, conflict management, project leadership) and “hard” project management skills (e.g., budgeting, scheduling, risk management) to successfully manage a project through its life cycle (i.e., initiation, planning, execution, and closing).
- Students will recommend process improvements for a business process based on computer models that they created for the business process in question.
- Students will be able to and are expected to develop solutions to common supply chain problems.
- Students will develop, manage, and improve production planning and control and inventory management systems.

Promotions and Digital Marketing Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
MKTG 321	Marketing	3
MKTG 420	Integrated Marketing Communication	3
MKTG 423	Digital Marketing Strategy	3
Choose one course from the following:		3
MKTG 324	Consumer Behavior	
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Management	
MKTG 426	Marketing Channels Management	
MKTG 427	Services Marketing	
MKTG 495	Product Development and Brand Management	
Total Hours		12

Courses to total 12 credits for this certificate

- Students completing the Promotions and Digital Marketing Strategy will be able to demonstrate an understanding of the promotional mix.
- Students completing the Promotions and Digital Marketing Strategy will be able to apply digital marketing strategies within the overall marketing strategy.
- Students completing the Promotions and Digital Marketing Strategy will be able to establish, execute, and quantitatively evaluate the digital marketing mix.

Sales Management Minor

Code	Title	Hours
AGEC 333	Introduction to Sales	3
MKTG 321	Marketing	3
MKTG 422	Sales Management	3
<i>Economics Elective</i>		3-4
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Sales Practicum Electives		3
AGEC 433	Advanced Sales	
BUS 429	Vandal Solutions	
MKTG 398	Internship	

Code	Title	Hours
MHR 417	Deploying and Developing Human Capital	3
MKTG 424	Pricing Strategy and Tactics	
MKTG 425	Retail Distribution Management	
MKTG 426	Marketing Channels Management	
OM 470	Supply Chain Analytics	

Total Hours 18-19

Courses to total 18 credits for this minor

Note: This minor is not open to students pursuing the B.S. Business, Marketing - Sales Management Option.

Sales Management Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
BUS 303	Business Negotiations	3
MKTG 321	Marketing	3
MKTG 422	Sales Management	3
MKTG 432	Advanced Sales Management	3
Total Hours		12

Courses to total 12 credits for this certificate

- Students completing the Sales Management Certificate will demonstrate an understanding of relevant theories as they apply to the field of business negotiations and bargaining.
- Students completing the Sales Management Certificate will develop skills in designing and executing sales management programs.

Trading and Capital Management Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
FIN 465	Introduction to Market Trading	3
FIN 466	Market Trading Strategies	3
One of the following:		3

AGEC 389	Understanding and Using Futures and Options Markets	
FIN 464	Derivatives and Risk Management	
At least 3 credits from the following:		3
AGEC 468	Risk Management: Commodity Merchandising	
AGEC 389L	Applied Commodity Market Analysis Lab	
FIN 468	Market Trading Lab	
FIN 467	Barker Capital Management Group	

Total Hours 12

Courses to total 12 credits for this certificate

College of Education, Health and Human Sciences

Philip W. Scruggs, Interim Dean; Allen Kitchel, Associate Dean, (875 Perimeter Drive: MS 3080; 208-885-6772).

Organized as the College of Education in 1920 and renamed in 2017, the College of Education, Health and Human Sciences contains the departments of Curriculum and Instruction, Leadership and Counseling, and Movement Sciences. As represented in the College's name, several programs serving Idaho and beyond are offered at the undergraduate, master's, specialist and doctoral levels in teaching and non-teaching fields of study.

Programs leading to degrees in teaching fields are offered in career and technical education, elementary education, physical education, secondary education and special education. Programs leading to non-teaching degrees include athletic training; adult, organizational learning and leadership; dance; exercise, sport, and health sciences; physical education; and recreation, sport, and tourism management. The College also offers programs leading to academic certificates in Human Resource Development and Technical Workforce Training.

Additionally, the College is home to the TRIO Pre-College programs and the Center on Disabilities and Human Development (CDHD). The education of professional personnel for the public schools constitutes a critical service to the state, its people and to the education profession. The College screens for admission to programs leading to educational service to assure that applicants are qualified by preparation and personal attributes for this important work. Teacher candidates complete a program in which competence in a broad general education, the professional functions of the teacher, and the subjects and/or skills to be taught are demonstrated and applied in P-12 schools. The College provides educational leadership for the people of Idaho, to the state's education system, and to the teaching profession through consultation, participation in organizational activities, and research. Preparation is provided in all of the major areas of professional education.

Admission Requirements

Admission to the University

For a statement of general undergraduate and graduate admission requirements, see admissions (p. 41) portion of this catalog.

Transfer Students

Students who have attended college, whether at another institution or in another division of the University, before matriculation in the College of Education, Health and Human Sciences, must have a grade-point average of 2.00 (C) or better.

Teacher Education Programs

At the University of Idaho, the preparation of teachers is a cooperative enterprise between the College of Education, Health and Human Sciences and other colleges. Coordination is achieved through the Teacher Education Coordinating Committee. The screening of all applicants for admission to Teacher Education Programs is the responsibility of the College of Education, Health and Human Sciences and the dean of the College, or their designee, is the recommending authority for certification.

Students preparing for a career in secondary teaching have the option of completing their bachelor's degrees in the College of Education,

Health and Human Sciences (except for agricultural education, family life education, and music education) or in the department of their subject major.

Secondary education students have an advisor from the College of Education, Health and Human Sciences who is the primary advisor on teacher education requirements. When a student identifies teacher education as their objective (this could be as early as the freshman year), an academic advisor is assigned to assist the student with program enrollment, progress and completion.

Admission to, Continuation in, and Exit from Teacher Education Programs

Prospective teacher education candidates work closely with academic advisors to assure that they meet the criteria for each step in the admission and continuation process.

Admission to Teacher Education Programs

All students who plan to enter degree seeking or certification only teacher education programs must make application for admission to the program. Criteria for admission to teacher education programs include:

1. Initial interview with academic advisor;
2. cumulative grade point average of 2.75 or better;
3. have completed, with a minimum of a C in the following courses: ENGL 102, University of Idaho General Education Mathematics Course, COMM 101 and EDCI 201 (including 20 hours of service-learning) or ECDE 210 for ECDE students;
4. letter of application;
5. recommendations;
6. completion of background check; and
7. when enrollment projections exceed departmental resources, a competitive interview.

Continuation in Teacher Education Programs

Students seeking to continue in teacher education programs shall not have received more than two negative indicators ("red flags") on all education-coursework standards and dispositions evaluations.

Eligibility for Internship Experience

Prospective teachers seeking to enter the internship year must meet the following criteria:

1. cumulative grade-point average of 2.75 or higher;
2. completion of background check;
3. completion of and successfully passing program-area content assessment (i.e., Praxis II);
4. for Elementary Education and Early Childhood Development and Education students only, completion of at least parts I and II of the Idaho Comprehensive Literacy Assessment with passing scores; and
5. recommendation of advisor.

The College of Education, Health and Human Sciences does not permit students enrolled in any student teaching or internship course to concurrently function as head coach in any school sponsored sport at any grade level, whether paid or voluntary. Students who desire to function as assistant coaches must have written approval of the department chair and the director of clinical experiences (adopted 1996).

Graduate Practicum and Internship in School Positions

Admission

Admission to practicum and internship courses is conditioned upon acceptance in a graduate program and approval of the student's major professor and/or committee.

The Program

Graduate students are provided clinical experience in the study of teaching and learning and in the performance of other school positions through graduate practica and internships (see courses 597 and 598 in the various subject fields in the college).

Teacher Certification

Students who complete a teacher education program at the University of Idaho are eligible to receive the Idaho Standard Instructional Certificate, the Exceptional Child Certificate, or the Career and Technical Certificate. Students completing a master's degree, education specialist degree, or doctorate in educational administration may qualify for an administrator's certificate. The College of Education, Health and Human Sciences reserves recommendations for initial teacher certification to students who have completed the approved teacher preparation program and hold a bachelor's degree. To initiate the state certification process, contact the certification officer.

Certification-Only for Elementary, Secondary, and Special Education

Elementary Education Certification

Students who are seeking certification as an elementary teacher satisfy the requirements for the Idaho Standard Instructional Certificate, endorsed grades K-8, by meeting the general education requirements outlined by the state, completing the professional education core, and by completing the elementary major and internship year.

Secondary Education Certification

Students who are seeking secondary teacher certification while enrolled in an academic major in a college other than the College of Education, Health and Human Sciences, or those seeking certification after completion of a degree, normally satisfy the requirements for the Idaho Standard Instructional Certificate by including PSYC 101 or PSYC 305, and the professional education core as electives in their program for the baccalaureate degree, and by completing either:

1. one 45-credit teaching major; or
2. one 30-credit teaching major and one 20-credit teaching minor, as well as the internship experience.

Special Education Certification

Students who are seeking certification as a special education teacher satisfy the requirements for the Idaho Exceptional Child Certificate, endorsed grades K-12, by meeting the general education requirements outlined by the state, completing the professional education core, completing the special education major, and by meeting the requirements for the elementary or secondary education major, and the internship experience.

Certification Checklists

Checklists for the elementary, secondary, and special education certification programs are available through the Department of Curriculum and Instruction and the Department of Movement Sciences. See the Academic Majors list in this section to locate the appropriate department.

Application for Certification

See procedures listed under Teacher Certification in this section.

Centers and Institutes

Centers and institutes affiliated with the College of Education, Health and Human Sciences support the mission of the College and extend services to the state, region, and nation. Programs offered through the College are enriched and extended as a result of these affiliations, and better positioned to be of assistance to local school districts and other educational units. The College is home to a number of centers and institutes. They are listed below; additional information about them can be accessed at the college website:

Center for Dance
Center for Disabilities and Human Development
Center for ETHICS
Institute for Mathematics, Instructional Technology, and Science Education
TRIO-INSPIRE

General College Requirements for Graduation

University Requirements

See regulation J (p. 78) for requirements that all students in the university must meet. When appropriate, courses listed in J-3 may satisfy both the University requirements and the College requirements.

College Requirements

All candidates for a baccalaureate degree in the College of Education, Health and Human Sciences must complete a minimum of 120 semester credits, of which at least 36 must be in upper-division courses, and satisfy all program requirements.

Degrees and Programs Offered

Undergraduate

Baccalaureate degrees offered in the College of Education, Health and Human Sciences include Bachelor of Science degrees with majors in career & technical education; elementary education; dance; secondary education; exercise, sport, & health science; and recreation, sport & tourism management. See the departmental section for the programs of studies leading to these degrees.

Graduate

The College of Graduate Studies offers advanced degrees in several disciplines of the College of Education, Health and Human Sciences. Students must fulfill the requirements of the College of Graduate Studies and of the department in which they intend to study. Consult the College of Graduate Studies (p. 292) section for further information.

Upon the completion of the appropriate programs of study, the following degrees are conferred: Master's of Education, Master's of Science, Master's of Arts in Teaching, Doctor of Athletic Training, Education

Specialist in Educational Leadership, Education Specialist, Doctor of Education, and Doctor of Philosophy.

Graduate programs at the master's level offer majors in adult, organizational learning & leadership; athletic training; career & technical education; curriculum & instruction; educational leadership; movement & leisure science; physical education; and recreation, sport & tourism management.

Doctoral candidates majoring in education focus their work in one of the specialization areas that represent the expertise of the College's faculty and offered through the departments in the College. The doctoral specialization areas under the major of education include adult, organizational learning & leadership; career & technical education; curriculum & instruction; educational leadership; exercise science; healthy active lifestyles; and special education. Students interested in pursuing a doctoral program must meet both the admission requirements of the College of Graduate Studies and the doctoral admission requirements from the College of Education, Health and Human Sciences. See the College of Graduate Studies (<http://www.uidaho.edu/cogs/>) and College of Education, Health and Human Sciences (<http://www.uidaho.edu/ed/>) web pages for specific requirements and timelines.

Major Curricula

Students in the College of Education, Health and Human Sciences must complete a major curriculum that leads to a degree granted by the College. These major curricula (with the degree goal identified) are listed in the individual department sections of this Catalog (see Departments of Curriculum and Instruction, Leadership and Counseling, and Movement Sciences).

Careful distinction should be made between a student's "academic major" and any additional "teaching majors" or "teaching minors" leading to school personnel certification.

Academic Majors Leading to Teacher Certification

Agricultural Education (B.S.Ag.Ed.) – Department of Agricultural Education, Leadership and Communications (p. 104)

Elementary Education (B.S.Ed.) – Department of Curriculum and Instruction (p. 205)

Exercise, Sport, and Health Sciences (B.S.E.S.H.S.) – Department of Movement Sciences (p. 232)

- Physical Education Teacher Certification Track

Music Education (B.Mus.) – Lionel Hampton School of Music (p. 347)

Career and Technical Education (B.S.C.T.E.) - Department of Curriculum and Instruction (p. 205)

- Business and Marketing Education Option
- Engineering & Technology Education Option
- Family and Consumer Sciences Option
- Occupational Education Option

Secondary Education (B.S.Ed.) – Department of Curriculum and Instruction (p. 205) (see list below)

Teaching Majors and Minors

45-Credit Teaching Majors

Art
 Biological Sciences
 Chemistry
 CTE: Business and Marketing
 CTE: Engineering and Technology
 CTE: Family and Consumer Science
 English
 Exceptional Child Generalist
 French
 German
 History
 Mathematics
 Physical Education
 Physical Sciences
 Physics
 Social Science
 Social Science Through American Studies (45 or 60 cr)
 Spanish

30-Credit Teaching Majors

English
 English through American Studies
 Exceptional Child Generalist
 Geography
 History
 History Through American Studies
 Mathematics
 Political Science
 Technology Education

20-Credit Teaching Minors

American Government & Political Science
 Art
 Basic Math
 Biological Sciences
 Business Education
 Chemistry
 Economics
 English
 English As a New Language
 French
 Geography
 Geology
 German
 Health Education
 History
 Library Science
 Mathematics
 Music: Vocal
 Online Teaching
 Physical Education (Secondary)
 Physics
 Spanish

Accreditation and Program Approval

The College of Education, Health and Human Sciences is accredited by several national organizations including the Council for the Accreditation of Educator Preparation (CAEP) for educator preparation, Commission

on Accreditation of Athletic Training Education (CAATE) for Athletic Training, Council on Accreditation of Parks, Recreation, Tourism and Related Professions (COAPRT) for Recreation, and the Idaho Professional Standards Commission for our ability to offer endorsement recommendations for Idaho teachers. In addition, the College is also active in supporting the University's accreditation by the Northwest Commission on Colleges and Universities.

Department of Curriculum and Instruction

Raymond Dixon, Chair (405 B Educ. Bldg. 83844-3082; 208-885-6587, rdixon@uidaho.edu)

The Department of Curriculum and Instruction includes teacher preparation programs for elementary education, secondary education, special education, and graduate programs in curriculum and instruction and special education.

The professional degree majors in curriculum and instruction provide knowledge, skills, and experiences to enable teachers to work effectively with K-12 students and schools. Students benefit from collaborative relationships and experience with partner schools and agencies.

Pre-service teaching degree majors are offered in elementary education and secondary education (B.S.Ed.). A fifth-year program is offered in Special Education. Students should consult an advisor concerning requirements for degree and/or certification.

Master's degrees are offered in curriculum and instruction and special education (M.Ed.). The doctorate is available in education (Ed.D., Ph.D.) with specializations in curriculum and instruction or special education with emphases in autism and developmental disabilities.

Elementary and Secondary Teacher Education

These programs include the university core curriculum, professional education core curriculum, and program content courses. Secondary students select teaching majors and minors from subjects currently taught in secondary schools such as English, social studies, sciences, mathematics, art, and foreign languages. Elementary students receive a B.S.Ed. degree; secondary students may earn a B.S.Ed. degree through the College of Education, Health and Human Sciences, Health and Human Sciences or a B.A. or B.S. degree through the department and college administering the academic major.

Early and continuous field experiences are a hallmark of the teacher preparation program, which culminates in a semester-long professional experience. Program goals include:

1. recruitment and retention of high quality students through rigorous admission, continuation, and exit criteria,
2. preparation of teachers in a standards driven, integrated, and field-based program,
3. completion of the Internship semester, and
4. engagement in continuing professional development for students, teachers, and university faculty to improve K-12 student performance.

Special Education Teacher Education

The 5th Year Special Education Program offers a unique program culminating in an undergraduate degree and recommendation for

certification in either elementary or secondary education plus a Master's Degree and recommendation for K-12 certification in special education. It is designed for students who want to become teachers in Special Education and general education.

Graduate Education/Curriculum and Instruction

The program provides advanced professional and foundational courses that support graduate study in the College of Education, Health and Human Sciences. Graduate programs in curriculum and instruction with an emphasis in teacher education include:

1. Master of Education in curriculum and instruction; and
2. doctoral degree programs (either Doctor of Education or Doctor of Philosophy) with emphases in curriculum and instruction.

Graduate Education/Special Education

The program provides advanced professional and foundational courses that support graduate study in the College of Education, Health and Human Sciences. Graduate programs in special education include:

1. Master of Education in special education; and
2. doctoral degree programs (either Doctor of Education or Doctor of Philosophy) with emphases in special education.

Persons interested in doctoral work in the College of Education, Health and Human Sciences should apply to the program through the College of Graduate Studies. Admission requirements for the doctoral program include:

1. a minimum grade-point average of 3.0 in undergraduate preparation,
2. a minimum grade-point average of 3.50 at the master's degree level or its equivalent, and
3. letters of recommendation. Exceptions to the criteria may be made when documented by the Graduate Review Committee.

The professional degree majors in Career and Technical Education provide the opportunity and relevant skills, knowledge, and dispositions to enable teachers, administrators, and business and industry personnel to work effectively with today's organizations, youth, and adults. Learners benefit from the realistic relationships between course experiences and work required by educational institutions, business, industry, agriculture, and family life.

Preservice teaching degree majors are offered in: Career and Technical Education (CTE) with options in Business and Marketing Education, Engineering & Technology Education, and Occupational Education in the College of Education, Health and Human Sciences. (See Admission to Teacher Education Programs (p. 202).)

For all undergraduate teaching degrees listed below, the student should consult an advisor concerning state requirements for the career-technical education certificate.

Business and Marketing Education

The business and marketing education option is for students interested in teaching business, marketing, and business technology subjects at the high school or post-secondary level. Completers of this option qualify for an Idaho secondary teaching certificate (6-12) in business technology

education, marketing technology education, and usually economics (based on selected electives).

Career-technical Education

The career-technical education option is designed primarily for teachers in area career-technical schools and secondary trade and industry programs who do not hold degrees. It does not qualify one for teaching in a public K-12 system unless a person also holds a secondary endorsement or an occupational specialist certificate.

Career-technical Certification

In collaboration with the Idaho State Division of career-technical Education, sequential in-service undergraduate career-technical education degree courses, as well as selected graduate career-technical courses, are offered each semester at area professional/technical schools located at Coeur d'Alene, Lewiston, Boise, and Twin Falls.

Technology Education

The Technology Education option is designed for students interested in teaching technical subjects related to construction technology, communications technology, electronics, engineering, manufacturing, production, and other technology related subjects. It is a 2+2 program, meaning graduates from technical and community colleges with an associate degree in a technical/science area can be admitted and complete the program in two full years. Graduates of this option qualify for an Idaho secondary teaching certificate in technology education (grades 6-12).

Majors

- Early Childhood Education (B.S.) (p. 142)

Offered by the Department of Family and Consumer Sciences in the College of Agricultural and Life Sciences. Coursework will prepare students to be recommended for Idaho Early Childhood Education/Early Childhood Special Education (ECE/ECSE) Blended Teacher Certification. Students will be certified to teach children birth through grade three.

For more information on an undergraduate major in Early Childhood Development and Education, see the School of Family and Consumer Sciences (p. 137) section.

- Elementary Education (B.S.Ed.) (p. 214)
- Secondary Education (B.S.Ed.) (p. 215)
- Career and Technical Education (B.S.Ed.) (p. 206)

Certificates

- Culturally Responsive Pedagogy and Universal Design for Learning Undergraduate Academic Certificate (p. 210)
- Technical Workforce Training Undergraduate Academic Certificate (<https://catalog.uidaho.edu/colleges-related-units/education-health-human-sciences/curriculum-instruction/technical-workforce-training-undergraduate-academic-certificate/>)

Curriculum and Instruction Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Curriculum and Instruction. See

the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Curriculum and Instruction (Ed.S.) (p. 211)
- Curriculum and Instruction (M.Ed.) (p. 211)
- Dual Credit Instructor Graduate Academic Certificate (p. 213)
- Education (Ed.D.) (p. 213)
- Education (Ph.D.) (p. 213)
- Secondary Education (M.A.T.) (p. 217)
- Special Education (M.Ed.) (p. 217)
- Teaching English to Speakers of Other Languages (M.A.) (p. 218)
- Technology Integration Specialist Graduate Academic Certificate (p. 230)

Career and Technical Education (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following courses. A 2.75 GPA is required for graduation.

Code	Title	Hours
General Career and Technical Education Requirements		
CTE 351	Principles and Philosophy of Career and Technical Education	3
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1-3
CTE 464	Career Guidance and Transitioning to Work	3
Options		
Select one of the following options:		45-87
Business and Marketing Education (p. 206)		
Engineering and Technology Education (p. 207)		
Family and Consumer Sciences (p. 208)		
Workforce Training and Development (p. 207)		
Total Hours		54-98

A. Business and Marketing Education Option

The Business and Marketing Education option is for students interested in teaching business, marketing, and business technology subjects at the high school or post-secondary level. Completers of this option may apply for Idaho secondary teacher certification with endorsements in business technology, marketing technology, and usually economics (based on selected electives).

Requirements include the General Career and Technical Education Requirements, the satisfactory completion of the PRAXIS II Content Area Exam, and the following:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
BLAW 265	Legal Environment of Business	3
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
CTE 413	Retail Merchandising for Marketing Education	3

CTE 415	Productivity Software in Business Education	3
or CTE 419	Database Applications and Information Management	
CTE 416	Website Design and Development	3
or CTE 460	Desktop Publishing	
CTE 418	Teaching Economics and Personal Finance	3
CTE 484	Internship in Career and Technical Education Teaching	10
CTE 492	Business and Marketing Education Methods	3
CTE 495	Administrative Technology Management and Procedures	3
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 401	Internship Seminar	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
ENGL 313	Business Writing	3
FCS 448	Consumer Economic Issues	3
MATH 143	College Algebra ¹	3
or STAT 251	Statistical Methods	
MHR 310	Leading Organizations and People ¹	3
or MHR 311	Introduction to Management	
MKTG 321	Marketing	3
PSYC 101	Introduction to Psychology	3
or PSYC 305	Developmental Psychology	
Select 6 credits of Accounting, Business, Economics or CTE electives		6
Total Hours		88

¹
This mathematics elective is in addition to the General Education Mathematics requirements. Students must complete a total of 6 credits.

Courses to total 128 credits for this degree

Note: Students interested in obtaining a teaching endorsement in Economics need to ensure that 3 credits of the designated elective credits are in economics, finance or accounting, see an advisor for details.

B. Workforce Training and Development Option

This option is designed for those teachers in secondary trade and industrial programs who wish to teach in post-secondary professional-technical programs. Requirements include the General Career and Technical Education Requirements and the following:

Code	Title	Hours
CTE 420	Assessment in Contextual Learning Environments	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 447	Diverse Populations and Individual Differences (Max 3 credits)	2-3
CTE 472	Teaching and Learning in Organizations	3
Select one approved course in computer literacy		3

Career and Technical electives approved by advisor to total 128	
CTE 200	Seminar
CTE 203	Workshop
CTE 204	Special Topics
CTE 299	Directed Study
CTE 400	Seminar
CTE 403	Workshop
CTE 404	Special Topics
CTE 418	Teaching Economics and Personal Finance
CTE 499	Directed Study

Additional requirements for Secondary Teaching Certificate include the following: ¹		
COMM 101	Fundamentals of Oral Communication	3
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 401	Internship Seminar	1
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
EDCI 485	Secondary Internship	10-15
or CTE 484	Internship in Career and Technical Education Teaching	
PSYC 101	Introduction to Psychology	3
or PSYC 305	Developmental Psychology	
Total Hours		46-52

¹
Additional requirements for CTE Occupational Education students seeking an Idaho Secondary Teaching Certificate include the satisfactory completion of the PRAXIS II Content Area Test, and COMM 101.

Courses to total 128 credits for this degree

C. Engineering and Technology Education Option

Requirements include the General Career and Technical Education Requirements, the satisfactory completion of the PRAXIS II Content Area Exam, and the following:

Code	Title	Hours
ASM 107	Beginning Welding	3
ASM 202	Agricultural Shop Practices	3
COMM 101	Fundamentals of Oral Communication	3
CTE 353	Manufacturing Systems	3
CTE 370	Transportation & Engineering Technologies	3
CTE 410	Technology & Society	3
CTE 415	Productivity Software in Business Education	3
CTE 416	Website Design and Development	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 462	Communication Technology	3
CTE 481		3
CTE 484	Internship in Career and Technical Education Teaching	10
CTE 494	Senior Project	3

EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
ENGL 317	Technical Writing II	3
MATH 143	College Algebra	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
PSYC 101	Introduction to Psychology	3
or PSYC 305	Developmental Psychology	

Total Hours 78

Courses to total 129 credits for this degree

D. Family and Consumer Sciences Option

Code	Title	Hours
CTE 420	Assessment in Contextual Learning Environments	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 447	Diverse Populations and Individual Differences	3
or EDCI 302	Teaching Culturally Diverse Learners	
CTE 484	Internship in Career and Technical Education Teaching	10-14
or AGED 498	Internship	
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 401	Internship Seminar	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
HDFS 105	Individual and Family Development	3
ATD 123	Textiles	3
FN 205	Concepts in Human Nutrition	3
ECDE 234	Infancy and Early Childhood	3
FCS 236		3
FCS 251	Survey of FCS Professions	1
FN 270	Scientific Principles of Food Preparation	3
FN 271	Scientific Principles of Food Preparation Lab	2
ECDE 340	Parent-Child Relationships in Family and Community	3
FCS 346	Personal and Family Finance and Management	4
or FCS 448	Consumer Economic Issues	
FCS 428	Housing America's Families	3
Select one of the following:		3-4
AGED 452	Methods of Teaching Agriculture	
CTE 472	Teaching and Learning in Organizations	

Total Hours 68-73

Courses to total 120 credits for this degree

Business and Marketing Education Option

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
Humanistic and Artistic Ways of Knowing Course		3
MATH 143 OR STAT 251		3

Hours 15

Spring Term 1		Hours
ECON 201	Principles of Macroeconomics	3
EDCI 201	Contexts of Education	3
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4

Hours 16

Fall Term 2		Hours
ACCT 201	Introduction to Financial Accounting	3
ECON 202	Principles of Microeconomics	3
EDCI 301	Learning, Development, and Assessment	3
Scientific Ways of Knowing Course		4
American Diversity Course		3

Hours 16

Spring Term 2		Hours
ACCT 202	Introduction to Managerial Accounting	3
BLAW 265	Legal Environment of Business	3
ENGL 313	Business Writing	3
International Course		3
Elective Course		3

Hours 15

Fall Term 3		Hours
CTE 351	Principles and Philosophy of Career and Technical Education	3
EDSP 300	Educating for Exceptionalities	3
MKTG 321	Marketing	3
CTE 415 OR CTE 419		3
PSYC 101 OR PSYC 305		3

Hours 15

Spring Term 3		Hours
CTE 413	Retail Merchandising for Marketing Education	3
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1
EDCI 410	Technology, Teaching and Learning	2
Elective Course		2
MHR 310 OR MHR 311		3
CTE 416 OR CTE 460		3

Hours 16

Fall Term 4		Hours
CTE 418	Teaching Economics and Personal Finance	3
CTE 464	Career Guidance and Transitioning to Work	3
CTE 495	Administrative Technology Management and Procedures	3
EDCI 463	Literacy Methods for Content Learning	3
FCS 448	Consumer Economic Issues	3
ACCT, BUS, ECON, or CTE, Major Elective Course		3

Hours 18

Spring Term 4		Hours
CTE 484	Internship in Career and Technical Education Teaching	10
CTE 492	Business and Marketing Education Methods	3
EDCI 401	Internship Seminar	1

ACCT, BUS, ECON, or CTE, Major Elective Course	3
Hours	17
Total Hours	128

Engineering and Technology Education Option

Fall Term 1		Hours
ASM 107	Beginning Welding	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		18

Spring Term 1		Hours
EDCI 201	Contexts of Education	3
ENGL 102	Writing and Rhetoric II	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PSYC 101 OR PSYC 305		3
Hours		13

Fall Term 2		Hours
ASM 202	Agricultural Shop Practices	3
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
EDCI 301	Learning, Development, and Assessment	3
American Diversity Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		16

Spring Term 2		Hours
EDCI 302	Teaching Culturally Diverse Learners	3
EDSP 300	Educating for Exceptionalities	3
ENGL 317	Technical Writing II	3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Elective Course		2
Hours		17

Fall Term 3		Hours
CTE 351	Principles and Philosophy of Career and Technical Education	3
CTE 370	Transportation & Engineering Technologies	3
CTE 410	Technology & Society	3
Approved CTE, Major Elective Course		3
Approved CTE, Major Elective Course		3
Elective Course		3
Hours		18

Spring Term 3		Hours
CTE 353	Manufacturing Systems	3
CTE 415	Productivity Software in Business Education	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1
Scientific Ways of Knowing Course		4
Hours		16

Fall Term 4		Hours
CTE 416	Website Design and Development	3
CTE 462	Communication Technology	3
CTE 464	Career Guidance and Transitioning to Work	3
EDCI 463	Literacy Methods for Content Learning	3
1 credit Elective Course		1

Elective Course	2
Hours	15

Spring Term 4		Hours
CTE 484	Internship in Career and Technical Education Teaching	10
CTE 481		3
CTE 494	Senior Project	3
Hours		16
Total Hours		129

Family and Consumer Sciences Option

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
HDFS 105	Individual and Family Development	3
Mathematical Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		2
Hours		14

Spring Term 1		Hours
EDCI 201	Contexts of Education	3
ENGL 102	Writing and Rhetoric II	3
FN 205	Concepts in Human Nutrition	3
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Hours		16

Fall Term 2		Hours
EDCI 301	Learning, Development, and Assessment	3
American Diversity Course		3
Scientific Ways of Knowing Course		4
Elective Course		3
FCS 123 OR FCS 419		3
Hours		16

Spring Term 2		Hours
ECDE 234	Infancy and Early Childhood	3
FCS 251	Survey of FCS Professions	1
FN 270	Scientific Principles of Food Preparation	3
EDCI 302	Teaching Culturally Diverse Learners	3
Humanistic and Artistic Ways of Knowing Course		3
CTE 447 OR EDCI 302		3
Hours		16

Fall Term 3		Hours
CTE 351	Principles and Philosophy of Career and Technical Education	3
EDSP 300	Educating for Exceptionalities	3
EDCI 410	Technology, Teaching and Learning	2
FCS 236		3
FN 271	Scientific Principles of Food Preparation Lab	2
FCS 340 OR FCS 445		3
Hours		16

Spring Term 3		Hours
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1
EDCI 463	Literacy Methods for Content Learning	3
FCS 428	Housing America's Families	3
International Course		3
FCS 346 OR FCS 448		3
Hours		15

Fall Term 4		Hours
CTE 420	Assessment in Contextual Learning Environments	3
CTE 426	Occupational Analysis and Curriculum Development	3
CTE 464	Career Guidance and Transitioning to Work	3

1 credit Elective Course	1
AGED 452 OR CTE 472	3
Hours	13
Spring Term 4	
EDCI 401 Internship Seminar	1
Elective Course	3
AGED 498 OR CTE 484	10
Hours	14
Total Hours	120

Workforce Training and Development Option

Fall Term 1		Hours
ENGL 101 Writing and Rhetoric I	3	
COMM 101 Fundamentals of Oral Communication	3	
Mathematical Ways of Knowing Course	3	
Scientific Ways of Knowing Course	4	
Career and Technical, Major Elective Course	3	
Hours	16	

Spring Term 1		
ENGL 102 Writing and Rhetoric II	3	
EDCI 201 Contexts of Education	3	
Career and Technical, Major Elective Course	3	
Social and Behavioral Ways of Knowing Course	3	
Humanistic and Artistic Ways of Knowing Course	3	
Hours	15	

Fall Term 2		
Computer Literacy, Major Elective Course	3	
American Diversity Course	3	
Scientific Ways of Knowing Course	4	
Career and Technical, Major Elective Course	3	
Career and Technical, Major Elective Course	3	
Hours	16	

Spring Term 2		
EDCI 301 Learning, Development, and Assessment	3	
Humanistic and Artistic Ways of Knowing Course	3	
International Course	3	
Career and Technical, Major Elective Course	3	
Career and Technical, Major Elective Course	3	
Career and Technical, Major Elective Course	3	
Hours	18	

Fall Term 3		
CTE 351 Principles and Philosophy of Career and Technical Education	3	
CTE 420 Assessment in Contextual Learning Environments	3	
EDCI 302 Teaching Culturally Diverse Learners	3	
EDSP 300 Educating for Exceptionalities	3	
Career and Technical, Major Elective Course	3	
Career and Technical, Major Elective Course	3	
Hours	18	

Spring Term 3		
CTE 430 Leadership and Student Organizations	2	
CTE 431 Supervising CTE Career and Technical Student Organizations	1	
CTE 426 Occupational Analysis and Curriculum Development	3	
EDCI 463 Literacy Methods for Content Learning	3	
Career and Technical, Major Elective Course	3	
Career and Technical, Major Elective Course	3	
Hours	15	

Fall Term 4		
CTE 464 Career Guidance and Transitioning to Work	3	
CTE 447 Diverse Populations and Individual Differences	3	

Career and Technical, Major Elective Course	3
Career and Technical, Major Elective Course	3
Career and Technical, Major Elective Course	1
PSYC 101 OR PSYC 305	3

Hours		16
Spring Term 4		
CTE 472 Teaching and Learning in Organizations	3	
EDCI 401 Internship Seminar	1	
CTE 484 OR EDCI 485	10	
Hours	14	
Total Hours	128	

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates work with others to create environments that support individual and collaborative learning and that encourage positive social interaction, active engagement in learning, and self-motivation.
2. Graduates understand and use multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the graduates' of Career and Technical Education and learners' decision-making.

Culturally Responsive Pedagogy and Universal Design for Learning Undergraduate Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
Mandatory Online 1-credit courses		
EDCI 418	Culturally Responsive Pedagogy	1
EDCI 420	Gender and Sexual Diversity in Schools	1
EDCI 421	Racial and Ethnic Diversity in Schools	1
EDCI 422	Socio-Economic Diversity in Rural Schools	1
EDCI 424	Universal Design in Learning	1
EDCI 426	Working with Native American Students and Communities	1

Selected Emphasis Electives		
Select two courses from the following: 6		
COMM 335	Intercultural Communication	
COMM 432	Gender and Communication	
EDSP 300	Educating for Exceptionalities	
EDCI 302	Teaching Culturally Diverse Learners	
SOC 201	Introduction to Inequity and Justice	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
PSYC 315	Psychology of Women	
THE 456	Studies in Theatre, Gender, and Sexuality	
THE 445	Theatre and Film of the Holocaust	

THE 455	Theatre for Social Change
HIST 213	Race and Ethnicity through the Ages
ENGL 383	African American Literature
ANTH 261	Language and Culture
CRIM 439	Inequalities in the Justice System
SOC 340	Environmental Sociology and Globalization
EDCI 448	Introduction to ENL

Courses to total 12 credits for this academic certificate

Learn and Integrate: Students will be able to report on the additional barriers underserved communities face in education. They will also be able to apply practical solutions to better serve these student groups

Think and create: Students will be able to design course pedagogy to meet the needs of all students, including those from historically marginalized populations.

Communicate: Students will be able to communicate effectively about topics related to diversity and with diverse communities through oral, written, and visual formats.

Clarify purpose and perspective: Students will be able to explain their own positionality given socio-political-historical processes. They will be able to use this knowledge to better inform their work as educators.

Practice Citizenship: Students will be able to explain the historical contexts that have given rise to our current inequality and design their courses in ways that benefit all students.

Curriculum and Instruction (Ed.S.) Education Specialist. Major in Curriculum and Instruction.

General Ed.S. requirements apply.

A Career and Technical Education emphasis is available by completing the following requirements:

Code	Title	Hours
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations (Max 3 credits)	1-3
CTE 464	Career Guidance and Transitioning to Work	3
CTE 551	Principles and Philosophy of Career and Technical Education	3
Select one of the following:		3
AOLL 573	Adult Learners: Foundations and Characteristics	
AOLL 574	Adult and Transformational Learning	
AOLL 575	Strategies for Facilitating Adult Learning	
CTE electives to total 24 credits		10-12
Total Hours		22-26

Note: There are additional requirements for obtaining a CTE teaching credential at the secondary and post-secondary levels in the state of Idaho. See a CTE advisor for details.

Courses to total 60 credits for this degree

Please see the Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/coe/Curriculum-and-Instruction/ci-grad-handbook.pdf>) for details and program requirements on earning the Education Specialist, Major in Curriculum and Instruction degree.

1. Graduates will demonstrate their understanding of the philosophical, historical, social, political, and cultural foundations of organizations.
2. Graduates will demonstrate how to develop curriculum that is relevant, engaging, challenging, and integrative for the learner. They will know how to select, adapt, and reflect on theories and engage in reflective practices in light of curriculum standards, theories, models, and learners.
3. Graduates will apply the principles of instruction and know a wide variety of teaching strategies and learning theories. They will incorporate relevant technologies while teaching core concepts, skills of inquiry, problem posing/solving, collaboration, and communication to facilitate student learning.
4. Graduates will use and interpret multiple types of assessments for monitoring, evaluating, and responding to student learning; they will understand, use, and critique formal, informal, and performance assessment techniques, including local, state, and national assessment systems to improve student learning.
5. Graduates will, as critical consumers of educational research, use educational research to inform practice.
6. Graduates understand human diversity as a valued component of educational systems; understand how to appropriately engage with diverse populations; effectively structure learning experiences with diverse populations; and effectively engage with diverse populations of students, parents, and colleagues.
7. Students will demonstrate their knowledge of the content that they teach. This goal may also be met through either previous coursework or experience or through content coursework included in the degree.

Curriculum and Instruction (M.Ed.) Master of Education. Major in Curriculum and Instruction.

Students completing a master's degree in Curriculum & Instruction must satisfy a minimum of 30 credit hours. Programs of study are customized for each student, and usually include the following EDCI core courses¹ (15 credit hours), and must include the required variable credit Non-Thesis Master's Research project:

Code	Title	Hours
EDCI 511	Planning and Administering the Curriculum	3
EDCI 513	History of Educational Thought	3
EDCI 524	Models of Teaching	3
EDCI 570	Introduction to Research in Curriculum and Instruction	3
EDCI 572	Measurement and Evaluation	3
EDCI 599	Non-thesis Master's Research	2-5
Total Hours		17-20

Note: The core courses are offered at least once during the Fall or Spring semester. All core courses are offered in the summer.

Career and Technical Education Emphasis

General M.Ed. requirements apply. A Career and Technical Education emphasis is available by completing the following requirements:

Code	Title	Hours
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1-3
CTE 464	Career Guidance and Transitioning to Work	3
CTE 551	Principles and Philosophy of Career and Technical Education	3
Select one of the following:		3
AOLL 573	Adult Learners: Foundations and Characteristics	
AOLL 574	Adult and Transformational Learning	
AOLL 575	Strategies for Facilitating Adult Learning	
CTE 447	Diverse Populations and Individual Differences	
Total Hours		12-14

Note: There are additional requirements for obtaining a CTE teaching credential at the secondary and post-secondary levels in the state of Idaho. See a CTE advisor for details.

Teacher Certification Emphasis

An emphasis leading to secondary teacher certification is available following demonstration of mastery of a secondary school content area and the following:

Code	Title	Hours
EDSP 300	Educating for Exceptionalities	3
EDCI 401	Internship Seminar	1
EDCI 511	Planning and Administering the Curriculum	3
EDCI 513	History of Educational Thought	3
EDCI 524	Models of Teaching	3
EDCI 563	Literacy Methods for Content Learning	3
EDCI 570	Introduction to Research in Curriculum and Instruction	3
EDCI 572	Measurement and Evaluation	3
EDCI 598	Internship	1-16
Content-Specific Methods Course		3
Content-Specific Methods Practicum		1
Total Hours		27-42

Note: There are additional requirements for obtaining a CTE teaching credential at the secondary and post-secondary levels in the state of Idaho. See a CTE advisor for details.

1. Graduates will demonstrate understanding of the philosophical, historical, social, political and cultural foundations of organizations.
2. Graduates will demonstrate how to develop curriculum that is relevant, engaging, challenging, and integrative for the learner. They will know how to select, adapt, and reflect on theories and engage in reflective practices in light of curriculum standards, theories, models, and learners.
3. Graduates will apply the principles of instruction and know a wide variety of teaching strategies and learning theories. They will incorporate relevant technologies while teaching core concepts, skills

of inquiry, problem posing/solving, collaboration, and communication to facilitate student learning.

4. Graduates will use and interpret multiple types of assessments for monitoring, evaluating, and responding to student learning; they will understand, use, and critique formal, informal, and performance assessment techniques, including local, state, and national assessment systems to improve student learning.
5. Graduates will, as critical consumers of educational research, use educational research to inform practice. They will demonstrate the skills to conduct classroom research and, as producers of educational research, will demonstrate their abilities to collect and analyze data, and to formally share their research findings.
6. Graduates will demonstrate their knowledge of human diversity as a valued component of educational systems and will effectively engage with and structure learning experiences for diverse populations of students, parents, and colleagues.
7. Graduates will demonstrate their knowledge of the content that they teach. This goal may also be met through either previous coursework or experience or through content coursework included in the degree.

Career and Technical Education Emphasis

1. Graduates will demonstrate their understanding of the philosophical, historical, social, political, and cultural foundations of organizations.
2. Graduates will demonstrate how to develop curriculum that is relevant, engaging, challenging, and integrative for the learner. They will know how to select, adapt, and reflect on theories and engage in reflective practices in light of curriculum standards, theories, models, and learners.
3. Graduates will apply the principles of instruction and know a wide variety of teaching strategies and learning theories. They will incorporate relevant technologies while teaching core concepts, skills of inquiry, problem posing/solving, collaboration, and communication to facilitate student learning.
4. Graduates will, as critical consumers of educational research, use educational research to inform practice. Graduates will also demonstrate the skills to conduct classroom research.
5. Graduates will use and interpret multiple types of assessments for monitoring, evaluating, and responding to student learning; they will understand, use, and critique formal, informal, and performance assessment techniques, including local, state, and national assessment systems to improve student learning.

Teacher Certification Emphasis

1. Graduates will demonstrate their understanding of the philosophical, historical, social, political, and cultural foundations of organizations.
2. Graduates will demonstrate how to develop curriculum that is relevant, engaging, challenging, and integrative for the learner. They will know how to select, adapt, and reflect on theories and engage in reflective practices in light of curriculum standards, theories, models, and learners.
3. Graduates will apply the principles of instruction and know a wide variety of teaching strategies and learning theories. They will incorporate relevant technologies while teaching core concepts, skills of inquiry, problem posing/solving, collaboration, and communication to facilitate student learning.
4. Graduates will use and interpret multiple types of assessments for monitoring, evaluating, and responding to student learning; they will understand, use, and critique formal, informal, and performance

assessment techniques, including local, state, and national assessment systems to improve student learning.

5. Graduates will, as critical consumers of educational research, use educational research to inform practice. They will demonstrate the skills to conduct classroom research and, as producers of educational research, will demonstrate their abilities to collect and analyze data and to formally share their research findings.
6. Graduates will understand human diversity as a valued component of educational systems; understand how to appropriately engage with diverse populations; effectively structure learning experiences with diverse populations; and effectively engage with diverse populations of students, parents, and colleagues.
7. Graduates will demonstrate their knowledge of the content that they teach. This goal may also be met through either previous coursework or experience or through content coursework included in the degree.

Dual Credit Instructor Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10- (<https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/>)b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/>)).

Disclaimer: The ability to utilize this certificate to meet dual credit teacher guidelines will vary by department. Please consult academic department prior to enrolling in the certificate.

Code	Title	Hours
EDCI 418	Culturally Responsive Pedagogy	1
Select 8 credits of Education-Related Course Work		8
EDCI 420	Gender and Sexual Diversity in Schools	
EDCI 421	Racial and Ethnic Diversity in Schools	
EDCI 422	Socio-Economic Diversity in Rural Schools	
EDCI 424	Universal Design in Learning	
EDCI 426	Working with Native American Students and Communities	
500-Level EDCI or EDSP electives		
Content-Specific Coursework		9
Select graduate-level coursework in discipline to be taught in dual credit class		
Total Hours		18

A minimum of 9 credits must be at the graduate level to earn the certificate.

Courses to total 18 credits for this certificate

Candidates for the Dual Credit Instructor Certificate will further their instructional and disciplinary expertise.

Completers will have implemented new models for teaching dual credit courses.

Education (Ed.D.)

Doctor of Education. Major in Education.

The Ed.D. degrees in this field is offered through the College of Education, Health and Human Sciences (p. 202).

Please see the Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/coe/Curriculum-and-Instruction/ci-grad-handbook.pdf>) for details and program requirements on earning the Doctor of Education, Major in Education degree.

1. University of Idaho College of Education, Health and Human Sciences Ed.D. graduates interpret the philosophical foundations, epistemological assumptions, and methodological frameworks of educational and social science research in original lines of scholarly inquiry for professional practice.
2. University of Idaho College of Education, Health and Human Sciences Ed.D. graduates articulate and demonstrate understand the ethical, moral, and legal considerations related to applying educational or social science research.
3. University of Idaho College of Education, Health and Human Sciences Ed.D. graduates respectfully communicate professional knowledge via classroom interactions, published work, professional presentations, meetings, policy initiatives, professional development or training, or consulting opportunities.
4. University of Idaho College of Education, Health and Human Sciences Ed.D. graduates articulate their purpose for pursuing doctoral education in relation to professional practice and identify transformational experiences to assist them in achieving their educational and professional goals.
5. University of Idaho College of Education, Health and Human Sciences Ed.D. graduates recognize and apply principles of ethical leadership, collaboration, and respect for diversity in professional practice or scholarly inquiry to promote positive social change.

Education (Ph.D.)

Doctor of Philosophy. Major in Education.

The Ph.D. degrees in this field is offered through the College of Education, Health and Human Sciences (p. 202).

Please see the Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/coe/Curriculum-and-Instruction/ci-grad-handbook.pdf>) for details and program requirements on earning the Doctor of Philosophy, Major in Education degree.

1. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates integrate the philosophical foundations, epistemological assumptions, and methodological frameworks of educational and social science research in original lines of scholarly inquiry.
2. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates articulate and demonstrate the ethical, moral, and legal considerations related to conducting educational or social science research.
3. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates respectfully communicate new knowledge through research that results in published work, professional presentations, policy initiatives, organizational changes, professional development or training, or consulting opportunities.

4. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates articulate their purpose for pursuing doctoral education through a professional development plan and identify transformational experiences to assist them in achieving their educational and research goals.
5. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates recognize and apply principles of ethical leadership, collaboration, and respect for diversity in scholarly inquiry to promote positive social change.

Elementary Education (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3 (p.)), successful completion of Praxis II test, the Idaho Comprehensive Literacy Assessment parts 1 and 2 prior to the internship, and completion of requirements for a subject area endorsement as outlined by the Idaho State Board of Education requirements for a Standard Secondary Certificate. Students must maintain minimum 2.75 GPAs and earn grades of C or above in the following courses:

Code	Title	Hours
	Subject Area Endorsement	10-33
	Major Requirements	96
Total Hours		106-129

Major Requirements

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 321	Literature for Children	3
EDCI 466	Literacy Assessment and Intervention	3
EDSP 300	Educating for Exceptionalities	3
HIST 101 or HIST 102	World History I World History II	3
HIST 111 or HIST 112	United States History I United States History II	3
MATH 143	College Algebra	3
MTHE 235	Mathematics for Elementary Teachers I	3
MTHE 236	Mathematics for Elementary Teachers II	3
PEP 350	Elementary Health and Physical Education	3
PSYC 305	Developmental Psychology	3
	Select one Advanced Composition Elective course:	3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 291	Beginning Poetry Writing	
ENGL 292	Beginning Fiction Writing	
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
ENGL 401	Writing Workshop for Teachers	
	Select one English Elective in Composition or Literature ¹	3
	Select one Literature Elective	3
	Select 6 credits of Social Science Electives other than Psychology	6

Elementary Education Major Requirements

EDCI 408	Integrated Elementary Methods Practicum I	3
EDCI 409	Integrated Elementary Methods Practicum II	1
<i>Mathematics/Science/Social Studies/Technology Block</i>		
EDCI 327	Elementary Math Education	3
EDCI 328	Elementary Social Studies Education	3
EDCI 329	Elementary Science Education	3
EDCI 410	Technology, Teaching and Learning	2
<i>Literacy/Arts Education Block</i>		
DAN 360	Teaching Creative Dance and Dance Integration for Children	1
EDCI 320	Teaching Reading and Literacy	3
EDCI 322	Teaching Writing/Language Arts	3
EDCI 325	Elementary Art Education	3
<i>Internship Semester</i>		
EDCI 401	Internship Seminar	1
EDCI 483	Elementary Internship I	14
Total Hours		97

Courses to total 120 credits for this degree

1

Excluding ENGL 101 Writing and Rhetoric I and ENGL 102 Writing and Rhetoric II.

Fall Term 1		Hours
EDCI 201	Contexts of Education	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
HIST 101 OR HIST 102		3
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
COMM 101	Fundamentals of Oral Communication	3
Scientific Ways of Knowing Course		4
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		16
Fall Term 2		Hours
EDCI 301	Learning, Development, and Assessment	3
Humanistic and Artistic Ways of Knowing Course		3
Composition or Literature, Major Elective Course		3
ENGL 207 OR ENGL 208 OR ENGL 291 OR ENGL 292 OR ENGL 309 OR ENGL 313 OR ENGL 317 OR ENGL 401		3
HIST 111 OR HIST 112		3
Hours		15
Spring Term 2		Hours
EDCI 302	Teaching Culturally Diverse Learners	3
EDSP 300	Educating for Exceptionalities	3
MTHE 235	Mathematics for Elementary Teachers I	3
Social Science, Major Elective Course		3
Hours		12
Fall Term 3		Hours
EDCI 321	Literature for Children	3
MTHE 236	Mathematics for Elementary Teachers II	3
PSYC 305	Developmental Psychology	3
Social Science, Major Elective Course		3

Literature, Major Elective Course	3
Hours	15
Spring Term 3	
DAN 360 Teaching Creative Dance and Dance Integration for Children	1
EDCI 320 Teaching Reading and Literacy	3
EDCI 322 Teaching Writing/Language Arts	3
EDCI 466 Literacy Assessment and Intervention	3
EDCI 325 Elementary Art Education	3
EDCI 409 Integrated Elementary Methods Practicum II	1
Hours	14
Fall Term 4	
EDCI 410 Technology, Teaching and Learning	2
PEP 350 Elementary Health and Physical Education	3
EDCI 408 Integrated Elementary Methods Practicum I	3
EDCI 329 Elementary Science Education	3
EDCI 328 Elementary Social Studies Education	3
EDCI 327 Elementary Math Education	3
Hours	17
Spring Term 4	
EDCI 401 Internship Seminar	1
EDCI 483 Elementary Internship I	14
Hours	15
Total Hours	120

*A subject area endorsement is required for this major. This will add 10-33 credits to the overall plan total and is not reflected in this study plan.

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates understand how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and design and implement developmentally appropriate and challenging learning experiences.
2. Graduates use understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.
3. Graduates work with others to create environments that support individual and collaborative learning and that encourage positive social interaction, active engagement in learning, and self-motivation.
4. Graduates understand the central concepts, tools of inquiry, and structures of the discipline(s) they teach and create learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.
5. Graduates understand how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.
6. Graduates understand and use multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.
7. Graduates plan instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content

areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

8. Graduates understand and use a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections and to build skills to apply knowledge in meaningful ways.
9. Graduates engage in ongoing professional learning and use evidence to continually evaluate their practice, particularly the effects of their choices and actions on others (learners, families, other professionals, and the community), and adapt practice to meet the needs of each learner.
10. Graduates seek appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals and community members to ensure learner growth, and to advance the profession.

Secondary Education (B.S.Ed.)

Required course work includes the university requirements (see regulation J-3 (p.)), successful completion of Praxis II test in the student's content area, and one 45-credit teaching major or one 30-credit teaching major and one 20-credit teaching minor (see "Teaching Majors and Minors (p. 218)" below). Students must maintain minimum 2.75 GPAs and earn grades of C or above in the following courses:

Code	Title	Hours
Teaching Majors and Minors (p. 218)		45-50
Major Requirements		49
Total Hours		94-99

Major Requirements

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 401	Internship Seminar	1
EDCI 410	Technology, Teaching and Learning	2
EDCI 463	Literacy Methods for Content Learning	3
EDCI 485	Secondary Internship	15
EDSP 300	Educating for Exceptionalities	3
PSYC 101 or PSYC 305	Introduction to Psychology Developmental Psychology	3
Select one Math or Statistics UI General Education course		3
Select one Advanced Composition course:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 291	Beginning Poetry Writing	
ENGL 292	Beginning Fiction Writing	
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
ENGL 401	Writing Workshop for Teachers	
Select one of the following Special methods sequence:		4

EDCI 449 & EDCI 447	Second Language Teaching Methods and Second Language Teaching Methods Practicum	
EDCI 431 & EDCI 441	Secondary English Methods and Secondary English Practicum	
EDCI 432 & EDCI 442	Secondary Social Studies Methods and Secondary Social Studies Methods Practicum	
EDCI 433 & EDCI 443	Secondary Science Methods and Secondary Science Methods Practicum	
EDCI 434 & EDCI 454	Secondary Mathematics Methods and Secondary Mathematics Methods Practicum	
EDCI 436 & EDCI 446	Secondary Art Methods and Secondary Art Methods Practicum	
Total Hours		49

Courses to total 128 credits for this degree

	Hours
Fall Term 1	
COMM 101 Fundamentals of Oral Communication	3
EDCI 201 Contexts of Education	3
ENGL 101 Writing and Rhetoric I	3
Mathematical Ways of Knowing Course	3
Scientific Ways of Knowing Course	4
Hours	16
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
Teaching Endorsement, Major Elective Course	3
Elective Course	3
PSYC 101 OR PSYC 305	3
Hours	15
Fall Term 2	
EDSP 300 Educating for Exceptionalities	3
EDCI 301 Learning, Development, and Assessment	3
Scientific Ways of Knowing Course	4
Teaching Endorsement, Major Elective Course	3
International Course	3
Hours	16
Spring Term 2	
EDCI 302 Teaching Culturally Diverse Learners	3
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Elective Course	2
ENGL 207 OR ENGL 208 OR ENGL 291 OR ENGL 292 OR ENGL 309 OR ENGL 313 OR ENGL 317 OR ENGL 401	3
Hours	17
Fall Term 3	
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Humanistic and Artistic Ways of Knowing Course	3
Hours	15
Spring Term 3	
EDCI 410 Technology, Teaching and Learning	2
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Social and Behavioral Ways of Knowing Course	3

American Diversity Course	3
Hours	17
Fall Term 4	
EDCI 463 Literacy Methods for Content Learning	3
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
Teaching Endorsement, Major Elective Course	3
(EDCI 449 AND EDCI 447) OR (EDCI 431 AND EDCI 441) OR (EDCI 432 AND EDCI 442) OR (EDCI 433 AND EDCI 443) OR (EDCI 434 AND EDCI 454) OR (EDCI 436 AND EDCI 446)	4
Hours	16
Spring Term 4	
EDCI 401 Internship Seminar	1
EDCI 485 Secondary Internship	15
Hours	16
Total Hours	128

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. The student understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.
2. The student uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.
3. The student works with others to create environments that support individual and collaborative learning and that encourage positive social interaction, active engagement in learning, and self-motivation.
4. The student understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.
5. The student understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.
6. The student understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.
7. The student plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.
8. The student understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections and to build skills to apply knowledge in meaningful ways.
9. The student engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

- 10. The student seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.
- 11. The teacher candidate should be able to distinguish between each of the federally recognized tribes with respect to the retention of their ancestral lands in Idaho: Coeur d'Alene Tribe, Kootenai Tribe of Idaho, Nez Perce Tribe, Shoshone-Bannock Tribes, and the Shoshone-Paiute Tribes. Teacher candidates build capacity in learners to utilize the assets that each learner brings to the learning community based on their backgrounds and experiences.
- 12. The teacher understands the Code of Ethics for Idaho Professional Educators and its place in supporting the integrity of the profession.
- 13. The teacher knows how to use digital technology to create lessons and facilitate instruction and assessment in face-to-face, blended, and online learning environments to engage students and enhance learning.

Secondary Education (M.A.T.)

Required course work includes successful completion of Praxis II test in the student's content area; one 45-credit teaching endorsement or one 30-credit teaching endorsement and one 20-credit teaching endorsement (see Teaching Majors and Minors (p. 218)); and maintaining at least a grade of 'C' in the following course requirements:

Code	Title	Hours
EDCI 501	Seminar	1
EDCI 543	Learning, Development, and Assessment	3
EDCI 544	Teaching Culturally Diverse Learners	3
EDCI 545	Technology, Teaching and Learning	2
EDCI 550	Contexts of Education	3
EDCI 563	Literacy Methods for Content Learning	3
EDCI 598	Internship	10
EDSP 520	Educating for Exceptionalities	3
Select one of the following Special Methods sequences:		4
EDCI 431 & EDCI 441	Secondary English Methods and Secondary English Practicum	
EDCI 432 & EDCI 442	Secondary Social Studies Methods and Secondary Social Studies Methods Practicum	
EDCI 433 & EDCI 443	Secondary Science Methods and Secondary Science Methods Practicum	
EDCI 434 & EDCI 454	Secondary Mathematics Methods and Secondary Mathematics Methods Practicum	
EDCI 436 & EDCI 446	Secondary Art Methods and Secondary Art Methods Practicum	
EDCI 437 & EDCI 447	Secondary Foreign Language Methods and Second Language Teaching Methods Practicum	
Total Hours		32

Special Education (M.Ed.) Master of Education. Major in Special Education.

Special Education is a unique program culminating in an undergraduate B.S.Ed. degree and recommendation for certification in either elementary or secondary education plus an Master of Education (M.Ed.) Degree and recommendation for the Standard Exceptional Child Certificate with a Generalist K-12 Endorsement. It is designed for students who want to become teachers in Special Education and general education.

Students must complete all requirements for a B.S.Ed in elementary or secondary education, and successfully complete with a 'C' or better these prerequisites:

Code	Title	Hours
EDSP 300	Educating for Exceptionalities	3
EDSP 325	Supporting Student Behaviors in the Classroom	3
EDSP 350	Language and Communication Development and Disorders	3
MTHE 235	Mathematics for Elementary Teachers I	3
Total Hours		12

Students must be admitted to the Special Education Masters Program through the College of Graduate Studies.

Students must also pass all three tests on the Idaho Comprehensive Literacy Assessment (ICLA) and the Praxis II Assessment in Special Education (10542 and 20353) and Elementary Education (10014) prior to beginning their special education internship.

Students will qualify for a Master of Education with a major in Special Education and an institutional recommendation for special education certification which will qualify the graduate for the Exceptional Child Certificate and Generalist K-12 Endorsement when they successfully complete the following coursework:

Code	Title	Hours
EDCI 570	Introduction to Research in Curriculum and Instruction	3
EDSP 423	Collaboration	3
EDSP 425	Evaluation of Children and Youth	3
EDSP 426	Developing Instructional Programs	3
EDSP 530	Assistive Technology and Universal Design for Learning for Pre-K12	2
EDSP 540	Behavioral Analysis for Children and Youth	3
EDSP 548	Special Education Curriculum	3
EDSP 549	Language, Communication, and Social/Emotional Enhancement	3
EDSP 597	Practicum	1-16
EDSP 599	Non-thesis Master's Research	1-16

Additional Reading Requirement

EDCI 463	Literacy Methods for Content Learning (For students with B.S.Ed. Elementary Education)
EDCI 320	Teaching Reading and Literacy (For students with B.S.Ed. Secondary Education)

Total Hours **25-55**

1. Graduates demonstrate an understanding of the philosophical foundation of disabilities and special education and historical and contemporary school models that promote developmentally responsive practices for all learners.
2. Graduates demonstrate an understanding that curriculum and interventions should be relevant, inviting, challenging, integrative, and exploratory. They illustrate how to design, select, and adapt curriculum for individuals in light of curriculum standards, theories, and models.
3. Graduates demonstrate an understanding of the principles of developmentally appropriate instruction, know a wide variety of teaching and learning strategies and interventions, and use technologically sound practices to teach core concepts, skills of inquiry, problem solving, collaboration, and communication.
4. Graduates analyze and demonstrate an understanding of the roles of multiple assessments for identifying, monitoring, and evaluating students' learning in order to modify instruction; they can develop and critique formal and informal and performance assessment techniques, including local, state, and national assessment systems.
5. Graduates, as critical consumers and producers of educational research, examine the role of educational research for collecting, analyzing, and sharing data.
6. Graduates select and apply a variety of communication techniques to foster inquiry, collaboration, and supportive interaction in and beyond the classroom.
7. Graduates demonstrate an understanding of individual and group motivation and behavior and create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

8. Standard 1: Special Education Law. The teacher candidate develops individualized education plans, transition plans, and behavior plans in accordance with applicable laws, rules, regulations, and procedural safeguards.

9. Standard 2: Specially Designed Instruction. The teacher candidate selects, adapts, modifies, and uses a repertoire of evidence-based instructional strategies, including universal design for learning to advance learning, self-advocacy, and independence of individuals with exceptionalities.

10. Standard 3: Assistive Technology. The teacher candidate designs strategies to facilitate optimal access to low and high technology tools and assistive technologies across learning environments to support the communication and learning of individuals with exceptionalities.

11. Standard 4: Eligibility Assessment. The teacher candidate administers, interprets, and explains technically sound eligibility assessments to guide educational decisions for individuals with exceptionalities.

12. Standard 5: Support Staff. The teacher candidate demonstrates knowledge in the guidance and direction to paraeducators and other student support staff.

Teacher Certification and Professional Development

A person who holds a bachelor's degree and wishes to earn an early childhood development and education, elementary education, secondary education teaching certificate should talk to the chair of the Department

of Curriculum and Instruction about entry into the certification and/or degree programs.

Teaching English to Speakers of Other Languages (M.A.)

The M.A. in Teaching English to Speakers of Other Languages (TESOL) is intended for students interested in learning to teach English as a second language at the secondary or post-secondary level. Students take courses in linguistics and language teaching pedagogy. This curriculum provides theoretical background and practical training in the areas of second language acquisition.

The 30 credits are to include the following courses:

Code	Title	Hours
EDCI 466	Literacy Assessment and Intervention	3
EDCI 544	Teaching Culturally Diverse Learners	3
EDCI 548	Introduction to ENL	3
EDCI 549	Second Language Teaching Methods	3
EDCI 597	Practicum	3
EDCI 599	Non-thesis Master's Research	3
ENGL 510	Studies in Linguistics	3
ENGL 517	Introduction to Applied Linguistics	3
ENGL 544	Sociolinguistics	3
ENGL 551	Theories of Second/Additional Language Acquisition	3
Total Hours		30

Native speakers of English in the TESOL program must have studied a foreign language for at least one semester (or equivalent) within the preceding five years. Non-native speakers of English are excused from this requirement.

1. Students successfully adapt and develop teaching materials for ESL learners.

Teaching Majors and Minors

One option required from the following:

- One 45-credit teaching major
- One 30-credit teaching major and one 20-credit teaching minor

The various teaching majors and teaching minors required to accompany several of the curricula are outlined below. Because the College of Education reserves the right to approve or disapprove the content of all proposed majors and minors, students should confer closely with their college advisors and with advisors in the academic department concerned in the selection of these courses.

- Art (p. 219)
- Basic Mathematics (p. 219)
- Biological Sciences (p. 220)
- Business Education (p. 220)
- Chemistry (p. 220)
- Computer Science (p. 221)
- Earth Science (p. 221)
- Economics (p. 222)

- Engineering and Technology Education (p. 222)
- English (p. 222)
- English as a New Language (p. 223)
- Exceptional Child Generalist Teaching Major (p. 223)
- French (p. 223)
- Geography (p. 224)
- German (p. 224)
- Health Education (p. 225)
- History (p. 225)
- K-12 Literacy Minor (p. 226)
- Library Science (p. 226)
- Mathematics (p. 226)
- Music Education (p. 227)
- Natural Science (p. 227)
- Online Teaching (p. 227)
- Physical Education (p. 227)
- Physical Sciences (p. 228)
- Physics (p. 228)
- Political Science (p. 228)
- Social Science (p. 229)
- Sociology/Anthropology (p. 230)
- Spanish (p. 230)
- Theater (p. 230)

Art

A. 52-Credit Art Teaching Major

Code	Title	Hours
ART 100	Introduction to Art: Why Art Matters	3
ART 110	Integrated Art and Design Communication	2
ART 111	Drawing I	3
ART 112	Drawing II	2
ART 121	Integrated Design Process	2
ART 122	Art & Design Process	3
Select 18 credits from the following:		18
ART 211	Life Drawing	
ART 221	Introduction to Graphic Design	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Introduction to Interaction Design	
ART 280	Understanding Photography	
Select two art studio courses from the following:		6
ART 321	Graphic Design: Concepts	
ART 330	Intermediate/Advanced Painting	
ART 340	Intermediate/Advanced Sculpture	
ART 350	Intermediate/Advanced Printmaking	
ART 370	Interaction/Experiential Design: Concepts	
Select three courses in Art History, any period		9
The following special methods sequence is also required:		
EDCI 436	Secondary Art Methods	3

EDCI 446	Secondary Art Methods Practicum	1
Total Hours		52

B. 20-Credit Art Teaching Minor

Code	Title	Hours
ART 100	Introduction to Art: Why Art Matters	3
ART 110	Integrated Art and Design Communication	2
ART 111	Drawing I	3
ART 112	Drawing II	2
ART 121	Integrated Design Process	2
ART 122	Art & Design Process	3
Select courses from the following:		6
ART 221	Introduction to Graphic Design	
ART 231	Painting I	
ART 241	Sculpture I	
ART 251	Printmaking I	
ART 261	Ceramics I	
ART 271	Introduction to Interaction Design	
ART 280	Understanding Photography	
or ART 321 Graphic Design: Concepts		
ART 330	Intermediate/Advanced Painting (Max 12 credits)	
ART 340	Intermediate/Advanced Sculpture (Max 9 credits)	
ART 350	Intermediate/Advanced Printmaking (Max 12 credits)	
ART 370	Interaction/Experiential Design: Concepts (Max 9 credits)	

Secondary candidates only:

EDCI 325	Elementary Art Education	
Candidates must also complete the following methods courses:		
EDCI 325	Elementary Art Education	3
EDCI 436	Secondary Art Methods	3
EDCI 446	Secondary Art Methods Practicum	1

Total Hours 28

Basic Mathematics

Basic Mathematics Teaching Minor (21 cr)

Code	Title	Hours
EDCI 411	Geometry, Measurement, and Trigonometry	3
EDCI 413	Data Analysis and Probability	3
EDCI 416	Proportional and Algebraic Reasoning	3
MTHE 409	Algebraic and Functional Reasoning	3
MTHE 410	Proof and Viable Argumentation	3
Select one of the following two options:		6
Elementary Teacher Candidates:		
MTHE 235	Mathematics for Elementary Teachers I	
MTHE 236	Mathematics for Elementary Teachers II	
Secondary Teacher Candidates:		
Advisor approved electives		

Total Hours 21

Biological Sciences

Note: MATH 143 is a prerequisite to required physics courses. To graduate in this program, students must earn a minimum grade of C in BIOL 114 and BIOL 115 and must have a minimum gpa of 2.40 in BIOL 114, BIOL 115, BIOL 213, BIOL 310, and BIOL 312.

A. 45-Credit Composite Teaching Major

Code	Title	Hours
Special Methods Sequence:		
EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 213	Structure and Function Across the Tree of Life	4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
BIOL 421	Advanced Evolution/Population Dynamics	3
CHEM 101 or CHEM 111	Introduction to Chemistry General Chemistry I	3
CHEM 101L or CHEM 111L	Introduction to Chemistry Laboratory General Chemistry I Laboratory	1
CHEM 275 or CHEM 277	Carbon Compounds Organic Chemistry I	3
PHYS 111 & 111L	General Physics I and General Physics I Lab	4
PHYS 112 & 112L	General Physics II and General Physics II Lab	4
Select 3-4 credits of electives ¹		3-4
Total Hours		49-50

1

See list of electives for the Biology major (p. 448) in the Department of Biological Sciences (p. 448).

B. 24-Credit Composite Teaching Minor

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 213	Structure and Function Across the Tree of Life	4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
Total Hours		24

Business Education

24 to 27-Credit Business Education Teaching Minor

Code	Title	Hours
ACCT 201 or ACCT 202	Introduction to Financial Accounting Introduction to Managerial Accounting	3
CTE 415	Productivity Software in Business Education	3
CTE 430	Leadership and Student Organizations	2
CTE 431	Supervising CTE Career and Technical Student Organizations	1-3
CTE 492	Business and Marketing Education Methods	3
CTE 495	Administrative Technology Management and Procedures	3
FCS 448	Consumer Economic Issues	3
MHR 311 or MKTG 321	Introduction to Management Marketing	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Total Hours		24-27

Note: This minor will not meet professional-technical certification requirements, but will enable the student to apply for a provisional professional-technical certificate.

Other required courses for professional-technical certification include:

Code	Title	Hours
CTE 351	Principles and Philosophy of Career and Technical Education	3
CTE 464	Career Guidance and Transitioning to Work	3

Chemistry

Note: See the physics and mathematics prerequisites for the chemistry courses listed below.

A. 45-Credit Chemistry Teaching Major

Code	Title	Hours
BIOL 114	Organisms and Environments	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 302	Principles of Physical Chemistry	3
CHEM 303	Principles of Physical Chemistry Lab	1
MATH 170	Calculus I	4
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3

PHYS 112L	General Physics II Lab	1
Select one Chemistry Elective		3
Select one of the following groups:		8-10

Group A:

BIOL 380 & BIOL 382	Biochemistry I and Biochemistry I Laboratory	
CHEM 275 & CHEM 276	Carbon Compounds and Carbon Compounds Lab	

Group B:

CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	
CHEM 372 & CHEM 374	Organic Chemistry II and Organic Chemistry II: Lab	

In addition to the above, the following special methods sequence is also required:

EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1

Total Hours 49-51

B. 21-Credit Chemistry Teaching Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 275	Carbon Compounds	3
CHEM 276	Carbon Compounds Lab	1
CHEM 302	Principles of Physical Chemistry	3
CHEM 303	Principles of Physical Chemistry Lab	1

Total Hours 21

Computer Science

Computer Science Teaching Endorsement (20 cr)

Code	Title	Hours
CSED 512	Computational Thinking and Problem Solving for Teachers	3
CSED 520	Computer Science I for Teachers	4
CSED 521	Computer Science II for Teachers	3
CSED 522	Computer Science III for Teachers	3
CTE 419/519	Database Applications and Information Management	3
EDCI 590	Computer Science Methods	3
EDCI 591	Computer Science Methods Practicum	1

Total Hours 20

Earth Science

Due to extensive course overlap, earth science majors may NOT select geology as a teaching minor.

45-Earth Science Teaching Major

Completion of the Earth Science Teaching Major involves completion of the following required courses and three or more advisor-approved elective courses to total 45 credits.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
GEOG 301	Meteorology	3
GEOG 313	Global Climate Change	3
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
GEOL 309	Ground Water Hydrology	3
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOL 335	Geomorphology	3
PHYS 103	General Astronomy	3
PHYS 104	Astronomy Lab	1
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1

Select one of the following:

GEOL 101 & 101L	Physical Geology and Physical Geology Lab	4
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	4

Select 9 credits of Advisor Approved Science electives: 9

GEOL 212	Dinosaurs and Prehistoric Life	
GEOL 249	Mineralogy and Optical Mineralogy	
GEOL 326	Igneous and Metamorphic Petrology	
GEOL 344	Earthquakes	
GEOL 345	Structural Geology	
GEOL 361	Geology and the Environment	
GEOL 410	Groundwater Field Methods	
GEOL 423	Principles of Geochemistry	

Total Hours 45

21-22-Credit Earth Science Teaching Minor

Code	Title	Hours
GEOG 301	Meteorology	3
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
GEOL 335	Geomorphology	3
PHYS 103	General Astronomy	3
PHYS 104	Astronomy Lab	1

Select one of the following: 4

GEOL 101 & 101L	Physical Geology and Physical Geology Lab	4
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	4

Select one of the following: 3-4

GEOL 212	Dinosaurs and Prehistoric Life	
GEOL 249	Mineralogy and Optical Mineralogy	
GEOL 324	Principles of Stratigraphy and Sedimentation	

GEOL 326	Igneous and Metamorphic Petrology
GEOL 344	Earthquakes
GEOL 345	Structural Geology
GEOL 361	Geology and the Environment
GEOL 410	Groundwater Field Methods
GEOL 422	Principles of Geophysics
GEOL 423	Principles of Geochemistry
Total Hours	21-22

Economics

A teaching major in economics is not offered.

20-Credit Economics Teaching Minor

Code	Title	Hours
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
CTE 418	Teaching Economics and Personal Finance	3
FCS 448	Consumer Economic Issues	3
Select Additional upper-division credits in Economics in one of the following areas:		8
Agriculture Science and Technology		
Accounting		
Business Education		
Economics		
Family and Consumer Science		
Finance		
Marketing Education		
Total Hours		20

Engineering and Technology Education

31-Credit Engineering and Technology Education Teaching Minor

For certification to teach technology education, a teaching minor must contain at least 20 credits distributed among and including each of the areas of communication technology; manufacturing technology; computer applications; power, energy & transportation; construction technology; principles of technology; and electronics technology.

Code	Title	Hours
CTE 370	Transportation & Engineering Technologies	3
CTE 462	Communication Technology	3
Other required courses for professional-technical certification include:		
CTE 351	Principles and Philosophy of Career and Technical Education	3
CTE 447	Diverse Populations and Individual Differences	2-3
CTE 464	Career Guidance and Transitioning to Work	3
CTE Electives to total 31 credits		9-10
Total Hours		23-25

English

A. 46-Credit English Teaching Major

Code	Title	Hours
ENGL 175	Literature and Ideas	3
or ENGL 215	Introduction to English Studies	
ENGL 201	English Grammar: Key Concepts and Terms	1
ENGL 241	Introduction to the Study of Language	3
ENGL 309	Rhetorical Style	3
ENGL 267	Survey of British Literature I	3
or ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	3
ENGL 278	Survey of American Literature II	3
ENGL 345	Shakespeare	3
ENGL 401	Writing Workshop for Teachers	3
ENGL/EDCI 445	Young Adult Literature (or one 400-Level English Literature Course)	3
ENGL 496	History of the English Language	3
Select two 400-level English area courses		6
Select one of the following:		3
ENGL 208	Personal & Exploratory Writing	
ENGL 291	Beginning Poetry Writing	
ENGL 292	Beginning Fiction Writing	
ENGL 293	Beginning Nonfiction Writing	
Select one literature course focusing on multicultural literature:		3
ENGL 380	U.S. Ethnic Literature	
ENGL 481	Women's Literature	
ENGL 482	Major Authors	
ENGL 383	African American Literature	
ENGL 384	Native American and Indigenous Literature	
ENGL 385	World Literature	
In addition, the following special methods sequence is also required		
EDCI 431	Secondary English Methods	3
EDCI 441	Secondary English Practicum	1
Total Hours		47

B. 34-Credit English Teaching Major

Code	Title	Hours
ENGL 175	Literature and Ideas	3
or ENGL 215	Introduction to English Studies	
ENGL 201	English Grammar: Key Concepts and Terms	1
ENGL 241	Introduction to the Study of Language	3
ENGL 267	Survey of British Literature I	3
or ENGL 278	Survey of American Literature II	
ENGL 277	Survey of American Literature I	3
ENGL 278	Survey of American Literature II	3
ENGL 309	Rhetorical Style	3
ENGL 345	Shakespeare	3
ENGL 401	Writing Workshop for Teachers	3
ENGL/EDCI 445	Young Adult Literature (or one 400-level English Literature course)	3
Select one literature course focusing on multicultural literature:		3

ENGL 380	U.S. Ethnic Literature	
ENGL 481	Women's Literature	
ENGL 482	Major Authors	
ENGL 383	African American Literature	
ENGL 384	Native American and Indigenous Literature or ENGL 385 World Literature	
In addition, the following special methods sequence is also required:		
EDCI 431	Secondary English Methods	3
EDCI 441	Secondary English Practicum	1
Total Hours		35

C. 22-Credit English Teaching Minor

Code	Title	Hours
ENGL 175	Literature and Ideas	3
or ENGL 215	Introduction to English Studies	
ENGL 201	English Grammar: Key Concepts and Terms	1
ENGL 241	Introduction to the Study of Language	3
ENGL 309	Rhetorical Style	3
ENGL 401	Writing Workshop for Teachers	3
ENGL 267	Survey of British Literature I	3
or ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	3
or ENGL 278	Survey of American Literature II	
Select one literature course focusing on multicultural literature:		3
ENGL 380	U.S. Ethnic Literature	
ENGL 481	Women's Literature	
ENGL 482	Major Authors	
ENGL 383	African American Literature	
ENGL 384	Native American and Indigenous Literature or ENGL 385 World Literature	
Total Hours		22

English as a New Language

A teaching major in English as a second language is not offered.

21-Credit English as a New Language Teaching Minor

Code	Title	Hours
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 448	Introduction to ENL	3
or EDCI 548	Introduction to ENL	
EDCI 449	Second Language Teaching Methods	3
or EDCI 549	Second Language Teaching Methods	
EDCI 466	Literacy Assessment and Intervention	3
Select one English Language/Linguistics Course ¹		3
Practicum or Field Experience in ENL ²		1
Select 4 credits of Modern language other than English from the following subjects:		4
Chinese		
French		
German		

Japanese	
Nez Perce	
Spanish	
Total Hours	20

1
e.g. ENGL 241 Introduction to the Study of Language, ANTH 241 Introduction to the Study of Language.
2
e.g. EDCI 402 Practicum, EDCI 597 Practicum

Courses to total 21 credits

Exceptional Child Generalist Teaching Major

A. 32 Credit Exceptional Child Generalist Teaching Major

Code	Title	Hours
EDCI 463	Literacy Methods for Content Learning	3
EDSP 300	Educating for Exceptionalities	3
EDSP 325	Supporting Student Behaviors in the Classroom	3
EDSP 350	Language and Communication Development and Disorders	3
EDSP 423	Collaboration	3
EDSP 425	Evaluation of Children and Youth	3
EDSP 426	Developing Instructional Programs	3
EDSP 430	Assistive Technology and Universal Design for Learning for PreK-12	2
EDSP 448	Special Education Curriculum	3
Internship Requirement ¹		6

Secondary Ed Majors Must also take:

Code	Title	Hours
EDCI 320	Teaching Reading and Literacy	3
MTHE 235	Mathematics for Elementary Teachers I	3
MTHE 236	Mathematics for Elementary Teachers II	3

1
This requirement falls within the internship requirement for the Elementary or Secondary Education majors. Elementary Education majors should take 14 credits of EDCI 483, and Secondary Education majors should take 15 credits of EDCI 485. In the internship application, students should indicate that placement needs to be split between elementary/secondary education and special education.

French

Basic language courses taken in high school or elsewhere may be evaluated for college equivalencies as part of this teaching major and minor. Consult the Department of Modern Languages & Cultures (p. 368) for policies on earning credit for vertically-related courses.

A. 45-Credit French Teaching Major

Code	Title	Hours
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
FREN 301	Advanced French Grammar	3
FREN 302	Advanced French Writing Skills	3
FREN 304	Connecting French Language and Culture	3
FREN 408	French and Francophone Culture and Institutions	3
FREN 449	Practicum in Tutoring	1
Select electives from the following:		7-10
ENGL 241	Introduction to the Study of Language	
FLEN 243	English Word Origins	
Approved Upper-Division Course in Literature		
Approved Upper-Division French Electives		
Approved upper division French Electives to total 45 credits		9
Total Hours		45-48

Code	Title	Hours
In addition, the following special methods sequence is required for the Secondary Education Major:		
EDCI 447	Second Language Teaching Methods Practicum	1
EDCI 449/549	Second Language Teaching Methods	3

Approved upper division French electives to total 45 credits in the teaching major.

B. 23-Credit French Teaching Minor

Code	Title	Hours
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
EDCI 447	Second Language Teaching Methods Practicum	1
EDCI 449/549	Second Language Teaching Methods	3
FREN 301	Advanced French Grammar	3
or FREN 302	Advanced French Writing Skills	
Total Hours		23

Geography

A. 28-Credit Geography Teaching Major

Code	Title	Hours
GEOG 100	Introduction to Planet Earth	3
GEOG 100L	Introduction to Planet Earth Lab	1
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
GEOG 385	Foundations of GIS	3
Select five courses from the following:		15
GEOG 330	Urban Geography	
GEOG 345	Global Economic Geography	

GEOG 360	Population Dynamics and Distribution (Max 4 credits)	
GEOG 365	Geopolitics and Conflict	
GEOG 390	Cartographic Design & Geovisualization	
GEOG 401	Climatology	
Total Hours		28

B. 24-Credit Geography Teaching Minor

Code	Title	Hours
GEOG 100	Introduction to Planet Earth	3
GEOG 100L	Introduction to Planet Earth Lab	1
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
GEOG 345	Global Economic Geography	3
GEOG 385	Foundations of GIS	3
Select 4 credits of additional Geography courses ¹		4
Candidates must also complete the following methods sequence:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		24

¹

Geography courses to total 20 credits.

German

Basic language courses taken in high school or elsewhere may be evaluated for college equivalences as part of this teaching major and minor. Consult the Department of Modern Languages & Cultures (p. 368) for policies on earning credit for vertically-related courses.

A. 45-Credit German Teaching Major

Code	Title	Hours
ENGL 241	Introduction to the Study of Language	3
FLEN 324	Topics in German Literature in Translation	3
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
GERM 301	German Reading and Writing	3
GERM 302	German Listening and Speaking	3
Select approved Upper Division German Electives ¹		17
Total Hours		45

Code	Title	Hours
In addition, the following special methods sequence is required for the Secondary Education major:		
EDCI 447	Second Language Teaching Methods Practicum	1
EDCI 449/549	Second Language Teaching Methods	3

¹

German electives should include at least one 400-level course, to total 45 credits in the teaching major.

B. 23-Credit German Teaching Minor

Code	Title	Hours
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
EDCI 447	Second Language Teaching Methods Practicum	1
EDCI 449/549	Second Language Teaching Methods	3
GERM 301	German Reading and Writing	3
or GERM 302	German Listening and Speaking	
Total Hours		23

Health Education

28-Credit Health Education Teaching Minor

A current advanced first aid and emergency care card is required upon graduation.

Code	Title	Hours
FN 205	Concepts in Human Nutrition	3
H&S 150	Wellness Lifestyles	3
or MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	
H&S 423/523	Health Education Methods	3
H&S 450	Critical Health Issues	3
H&S 451	Psychosocial Determinants of Health	3
H&S 490	Health Promotion	3
MVSC 486/586	Healthy Active Lifestyle Assessment and Intervention	3
PSYC 330	Human Sexuality	3
or HDFC 240	Intimate Relationships	
Select one of the following sequences:		4
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	
EPPN 154 & EPPN 155	Microbiology and the World Around Us and Microbiology and the World Around Us: Laboratory	
Total Hours		28

History

A. 45-Credit History Teaching Major

Code	Title	Hours
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 290	The Historian's Craft	3
Upper-Division History Courses		
Select 3 credits of Non-Regional U.S. History courses		3

Select 3 credits of Latin American History courses		3
Select 3 credits of Asian or African History courses		3
Select 3 credits of Pre-1750 History from Any Region courses		3
Select 3 credits of American Non-European Ethnic History courses		3
Select 3 credits of Modern European History courses		3
Additional Upper-Division History Courses ¹		9
<i>In addition, the following special methods sequence is also required:</i>		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		46

¹

Approved Upper Division History Electives to total 45 credits in the teaching major. *Note: A single course may satisfy more than one of the upper-division requirements.*

B. 33-Credit History Teaching Major

Code	Title	Hours
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
HIST 290	The Historian's Craft	3
Upper-Division History Courses²		
Select 3 credits of Non-Regional U.S. History courses		3
Select 3 credits of Latin American History courses		3
Select 3 credits of Asian or African History courses		3
Select 3 credits of Pre-1750 History from Any Region courses		3
Select 3 credits of Modern European History courses		3
<i>In addition, the following special methods sequence is also required:</i>		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		34

²

Approved Upper Division History Electives to total 33 credits in the teaching major. *Note: A single course may satisfy more than one of the upper-division requirements.*

C. 21-Credit History Teaching Minor

Code	Title	Hours
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
POLS 101	American National Government	3
Select at least 3 credits of US, Latin American, or African History upper-division courses		3
Select at least 3 credits of Ancient, European, or Asian History upper-division courses		3
Candidates must also complete the following methods sequence:		
EDCI 432	Secondary Social Studies Methods	3

EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		25

K-12 Literacy Minor

Code	Title	Hours
EDCI 320	Teaching Reading and Literacy	3
EDCI 321	Literature for Children	3
EDCI 322	Teaching Writing/Language Arts	3
EDCI 409	Integrated Elementary Methods Practicum II	1
EDCI 448	Introduction to ENL	3
or EDCI 548	Introduction to ENL	
EDCI 449	Second Language Teaching Methods	3
or EDCI 549	Second Language Teaching Methods	
EDCI 466	Literacy Assessment and Intervention	3
ENGL 241	Introduction to the Study of Language	3
Total Hours		22

To obtain a literacy endorsement, applicants must complete the Idaho Comprehensive Course or the Idaho Literacy Assessment (ICLA). By completing EDCI 320, 322 and 466, this requirement will be met.

Library Science

A teaching major in library science is not offered.

27-Credit Library Science Teaching Minor

The teaching minor in library science must total 27 credits in the areas of collection development/materials selection; literature for children and/or young adults; organization of information (cataloging and classification); school library administration/management; library information technologies; information literacy; and reference and information services. This teaching minor will qualify the student for the Idaho K-12 Teacher Librarian Endorsement. Because library science is not a teaching field, the teacher librarian must also qualify for a standard Idaho elementary or secondary teacher's certificate.

Code	Title	Hours
LIBS 410	Libraries and their Collection: Materials Selection	3
LIBS 413	Computer Applications in Libraries	3
LIBS 414	Reference and Information Services	3
LIBS 418	Classification and Cataloging	3
LIBS 425	School Library Administration, Leadership, and Management	3
LIBS 427	Library and Media Center Practicum	3
LIBS 430	Children's Literature for Teacher Librarian	3
LIBS 431	Adolescent Literature for Teacher Librarians	3
LIBS 433	Information Literacy for the Teacher Librarian	3
Total Hours		27

Mathematics

MATH 143 and MATH 144 may be necessary prerequisites for students with weak backgrounds.

A. 51-52-Credit Mathematics Teaching Major

Code	Title	Hours
CS 112	Computational Thinking and Problem Solving	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 275	Calculus III	3
MATH 330	Linear Algebra	3
MATH 388	History of Mathematics	3
MATH 427	Transformational Geometry	3
MTHE 409	Algebraic and Functional Reasoning	3
MATH 461	Abstract Algebra I	3
MATH 471	Introduction to Analysis I	3
MATH 390	Axiomatic Geometry	3
or MATH 391	Modern Geometry	
Select one of the following:		3-4
STAT 251	Statistical Methods	
STAT 301	Probability and Statistics	
MATH/STAT 451	Probability Theory	
Select one of the following:		3
MATH 430	Advanced Linear Algebra	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 462	Abstract Algebra II	
MATH 472	Introduction to Analysis II	
MATH 476	Combinatorics	
In addition, the following special methods sequence is also required:		
EDCI 434	Secondary Mathematics Methods	3
EDCI 454	Secondary Mathematics Methods Practicum	1
Total Hours		51-52

B. 36-37-Credit Mathematics Teaching Major

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 330	Linear Algebra	3
MATH 427	Transformational Geometry	3
MTHE 409	Algebraic and Functional Reasoning	3
MATH 390	Axiomatic Geometry	3
or MATH 391	Modern Geometry	
MATH 461	Abstract Algebra I	3
or MATH 471	Introduction to Analysis I	
Select one of the following:		3-4

STAT 251	Statistical Methods
STAT 301	Probability and Statistics
MATH 451	Probability Theory

In addition, the following special methods sequence is also required:

EDCI 434	Secondary Mathematics Methods	3
EDCI 454	Secondary Mathematics Methods Practicum	1

Total Hours 36-37

C. 33-Credit Mathematics Teaching Minor

Code	Title	Hours
EDCI 413	Data Analysis and Probability	3
EDCI 416	Proportional and Algebraic Reasoning	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 330	Linear Algebra	3
MATH 390	Axiomatic Geometry	3
or MATH 391	Modern Geometry	
MTHE 409	Algebraic and Functional Reasoning	3
MTHE 410	Proof and Viable Argumentation	3

In addition, the following special methods sequence is also required:

EDCI 434	Secondary Mathematics Methods	3
EDCI 454	Secondary Mathematics Methods Practicum	1

Total Hours 33

Music Education

26-Credit Vocal Music Teaching Minor

Code	Title	Hours
MUSA 114	Studio Instruction ¹	2
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 387	Conducting I	2
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUST 385	Choral Music in the Secondary School	3
MUSI 100	Introduction to Music	3
or MUSH 111	Introduction to the World of Music	
MUSX 140	Recital Attendance (Two semesters required.)	0
Select 4 credits of Vocal Ensembles		4
Total Hours		26

1

If students do not qualify immediately for MUSA 114 Studio Instruction, they must take Voice Class until they can meet departmental approval.

Natural Science

45-Credit Natural Science Teaching Major

Must hold an existing endorsement in one of the following areas: Biological Science, Chemistry, Earth Science, Geology, or Physics; and complete a total of twenty-four (24) semester credit hours as follows:

- Existing Biological Science Endorsement (p. 220). Eight (8) semester credit hours in each of the following areas:
 - Physics, Chemistry, Earth Science/Geology.
- Existing Physics Endorsement (p. 228). Eight (8) semester credit hours in each of the following areas:
 - Biology, Chemistry, Earth Science/Geology.
- Existing Chemistry Endorsement (p. 220). Eight (8) semester credit hours in each of the following areas:
 - Biology, Physics, Earth Science/Geology.
- Existing Earth Science or Geology Endorsement (p. 221). Eight (8) semester credit hours in each of the following areas:
 - Biology, Physics, Chemistry.

Online Teaching

20-Credit Online Teaching Teaching Minor

Code	Title	Hours
EDCI 410	Technology, Teaching and Learning	2
EDCI 581	Theoretical Foundations of Online Learning	3
EDCI 582	Online Course Design	3
EDCI 595	Practicum in Online Learning	3
ECDI Elective		3
Approved CTE Courses to total 20 credits		6
Total Hours		20

Physical Education

Physical Education Teaching Minor (Grade levels 1-12)

An academic major in Physical Education Teacher Education is offered through the Department of Movement Science leading to the degree of B.S.Ed. For information on the undergraduate major in Physical Education, see the Department of Movement Sciences (p. 232) section.

Code	Title	Hours
IFIT 108	Water-Based Fitness and Sports	1
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 107	Movement Fundamentals	1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	1
PEP 133	Skill and Analysis of Target and Invasion Activities	1
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	1
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 360	Motor Behavior	3

PEP 412	Elementary Methods in Physical Activity Pedagogy	3
PEP 413	Foundations and Assessment in Physical Activity Pedagogy	3
PEP 418	Physiology of Exercise	3
PEP 421	Secondary Methods in Physical Activity Pedagogy	3
PEP 424	Inclusive Physical Education and Recreation	3
First Aid and CPR Certificate		
Total Hours		32

Physical Sciences

45-Credit Composite Teaching Major

This is a 40-credit composite teaching major consisting of courses in chemistry, geology, and physics. A teaching minor in mathematics is recommended to accompany this teaching major.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 275	Carbon Compounds	3
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	4
PHYS 103	General Astronomy	3
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	4
PHYS 213	Engineering Physics III	3
PHYS 411	Advanced Physics Lab	4
Select one of the following:		3-4
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	
BIOL 114	Organisms and Environments	
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
GEOG 401	Climatology	
Select Additional Electives in Chemistry Geology or Physics to total 45 credits ¹		2-3
In addition, the following special methods sequence is also required:		
EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1
Total Hours		43-45

1

Recommended Elective courses include BIOL 380 Biochemistry I & CHEM 302 Principles of Physical Chemistry (2-3 cr).

Physics

A. 45-Credit Physics Teaching Major

Code	Title	Hours
BIOL 114	Organisms and Environments	4
MATH 170	Calculus I	4

MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 103	General Astronomy	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
PHYS 411	Advanced Physics Lab	4
Select one of the following:		4

CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select approved upper division Physics electives to total 45 credits in the teaching major		5
In addition, the following special methods sequence is also required:		
EDCI 433	Secondary Science Methods	3
EDCI 443	Secondary Science Methods Practicum	1
Total Hours		49

B. 20-Credit Physics Teaching Minor

Code	Title	Hours
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
Select Physics electives approved by advisor in Dept of Physics, including at least 2 credits of lab work.		6
Total Hours		20

Political Science

A. 30-Credit Political Science Teaching Major

A minimum of 30 credits in political science courses is required with an additional 6 credits in US history necessary for certification. Courses listed in more than one field may be counted in only one of those fields. Substitutions in specific courses may be made with the consent of the advisor.

Code	Title	Hours
POLS 101	American National Government	3
Select 6 credits of U.S. History electives		6
Select 9-12 credits from the following:		9-12
POLS 437	American Presidency	
Select at least 3 credits of Comparative Government and Politics courses from the following:		3
POLS 381	European Politics	
POLS 480	Politics of Development	

POLS 487	Political Violence and Revolution	
Select at least 3 credits of International Relations courses from the following:		3
POLS 237	Introduction to International Politics	
POLS 440	International Organizations and International Law	
POLS 449	World Politics and War	
Select at least 3 credits of Public Administration and Public Law courses from the following:		3
POLS 451	Public Administration	
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
Select at least 3 credits of Political Thought courses from the following:		3
PHIL 427	History of Political Philosophy II	
POLS 428	American Political Thought	
In addition, the following special methods sequence is also required:		
EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1
Total Hours		34-37

B. 20 Credit American Government and Political Science Teaching Minor

A minimum of 20 credits in political science courses is required with an additional 6 credits in US history necessary for certification.

Code	Title	Hours
POLS 101	American National Government	3
Select 3 credits of U.S. Government courses from the teaching major above		3
Select 3 credits of Comparative Government courses from the teaching major above		3
Select 12 credits of other Political Science electives from courses listed in the teaching major		12
Select 6 credits of US History electives		6
Total Hours		27

Social Science

A. 56-Credit Composite Teaching Major

The basic objective of this teaching major is to provide the undergraduate student with the preparation that leads to teaching social studies in the public schools. To obtain a social studies endorsement in the state of Idaho, a student must pass the Praxis II exam in both social studies content knowledge and in one of the other areas listed below (Economics, Geography, History, or Political Science) where they have a minimum of 20 credits of coursework. This will result in a student being endorsed to teach in any of the subject areas included in the composite major.

Idaho's federal representatives have approved the Social Studies endorsement as meeting "Highly Qualified" status for all four of the related core content areas; history, geography, economics, and government.

It is important to note that the converse is not true. If a teacher has an endorsement in one or more of the core social studies areas, but does NOT hold the full Social Studies endorsement, they cannot be considered

"Highly Qualified" to teach in any area other than those for which they hold the specific endorsement.

Students need to choose one area (History, Economics, Geography, or Political Science) for an endorsement which includes 20 credit hours, and complete 12 credits in each of the other remaining content areas (History, Economics, Geography, or Political Science).

Code	Title	Hours
<i>History</i>		
HIST 101	World History I	3
HIST 102	World History II	3
HIST 111	United States History I	3
HIST 112	United States History II	3
Select one US, Latin American, or African History elective		3
Select one Ancient, European, or Asian History elective		3
<i>Economics</i>		
ECON 201	Principles of Macroeconomics	3
ECON 202	Principles of Microeconomics	3
Select 6 credits of Economic electives from the following:		6
ACCT 201	Introduction to Financial Accounting	
CTE 418	Teaching Economics and Personal Finance	
CTE 492	Business and Marketing Education Methods	
ECON 351	Intermediate Macroeconomic Analysis	
ECON 352	Intermediate Microeconomic Analysis	
FCS 346	Personal and Family Finance and Management	
FCS 448	Consumer Economic Issues	
<i>Geography</i>		
GEOG 100	Introduction to Planet Earth	3
GEOG 385	Foundations of GIS	3
Select 6 credits of Geography electives from the following:		6
GEOG 165	Human Geography	
GEOG 200	World Cultures and Globalization	
GEOG 313	Global Climate Change	
GEOG 330	Urban Geography	
GEOG 345	Global Economic Geography	
GEOG 350	Sustainability of Global Development	
GEOG 360	Population Dynamics and Distribution	
GEOG 365	Geopolitics and Conflict	
GEOG 390	Cartographic Design & Geovisualization	
GEOG 401	Climatology	
GEOG 420	Land, Resources, and Environment	
<i>Political Science</i>		
POLS 101	American National Government	3
Select one of the following:		3
POLS 275		
POLS 331	American Political Parties and Elections	
POLS 332	American Congress	
POLS 333	American Political Culture	
POLS 338	American Foreign Policy	
Select 6 credits of Political Science electives from the following:		6
POLS 205	Introduction to Comparative Politics	
POLS 237	Introduction to International Politics	
POLS 381	European Politics	

POLS 440	International Organizations and International Law	
POLS 449	World Politics and War	
POLS Elective numbered 100-499		

In addition, the following special methods sequence is also required:

EDCI 432	Secondary Social Studies Methods	3
EDCI 442	Secondary Social Studies Methods Practicum	1

Total Hours **58**

B. 45- OR 60-Credit Teaching Major Through American Studies

American studies majors follow the credit distributions and recommended courses as stated above for economics, geography, history, political science, and sociology/anthropology.

Sociology/Anthropology

21-Credit Sociology/Anthropology Teaching Minor

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
ANTH 102	Cultural Anthropology	3
SOC 101	Introduction to Sociology	3
SOC 201	Introduction to Inequity and Justice	3
Select three electives in SOC, ANTH, or AIST		9
Total Hours		21

Note: EDCI 432 and EDCI 442 (methods and practicum) are also required for this endorsement.

Spanish

Basic language courses taken in high school or elsewhere may be evaluated for college equivalencies as part of this teaching major and minor. Consult the Department of Modern Languages & Cultures (p. 368) for policies on credit for vertically-related courses.

A. 45-Credit Spanish Teaching Major

Code	Title	Hours
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
SPAN 301	Advanced Grammar	3
SPAN 302	Advanced Composition	3
SPAN 305	Culture and Institutions of Spain	3
SPAN 306	Culture and Institutions of Latin America	3
Select 17 credits of Upper-division Spanish language courses ¹		17
Total Hours		45

Code **Title** **Hours**

In addition, the following special methods sequence is required for the Secondary Education major:

EDCI 447	Second Language Teaching Methods Practicum	1
EDCI 449/549	Second Language Teaching Methods	3

¹

9 credits must be at 400 level to total 45 credits in the teaching major.

A maximum of 3 credits in FLEN 391 Hispanic Film or FLEN 394 Latin American Literature in Translation may be counted toward a teaching major in Spanish.

B. 22-Credit Spanish Teaching Minor

Code	Title	Hours
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
Select 6 credits of approved Upper-Division Spanish Electives ¹		6
Total Hours		22

Code **Title** **Hours**

In addition, the following special methods course is also required for the Secondary Teaching major:

EDCI 447	Second Language Teaching Methods Practicum	1
EDCI 449/549	Second Language Teaching Methods	3

¹

Spanish Electives: Either SPAN 301 or SPAN 302 required; lab-based and lit in translation courses are not acceptable.

Theater

21-Credit Drama Teaching Minor

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
COMM 111	Introduction to Communication	3
THE 101	Introduction to the Theatre	3
THE 102	Introduction to Design	3
THE 105	Basics of Performance I	3
THE 103	Theatre Technology	3
THE 471	Directing	3
Total Hours		21

Note: EDCI 436 and EDCI 446 (methods and practicum) are also required for this endorsement.

Technology Integration Specialist Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
EDCI 556	Role of a Technology Integration Specialist	1
EDCI 557	Create Instructional Videos with Screencasting	1
EDCI 561	G Suite Tools in the Classroom	1
EDCI 571	Google Classroom	1
EDCI 573	Google Tips, Tricks, and Extensions	1

EDCI 574	Improving the Use of Video in the Classroom	1
EDCI 575	Integrating Technology Through the Universal Design for Learning	1
EDCI 576	Interactives and Simulations	1
EDCI 577	Open Educational Resources (OER)	1
EDCI 578	Tools for Digital Assessment	1
EDCI 579	Tools to Support Collaboration In and Out of the Classroom	1
EDCI 580	Tools to Support Literacy	1
Total Hours		12

Courses to total 12 credits for this certificate

Department of Leadership and Counseling

Laura Holyoke, Interim Dept. Chair (208-885-7606; holyoke@uidaho.edu).

Adult, Organizational Learning and Leadership

Adult, Organizational Learning and Leadership programs prepare leaders in a wide range of careers including higher education, business, government agencies and nonprofit organizations. It offers a master's degree and also delivers a professional certificate in Human Resource Development. A doctorate (Ph.D. or Ed. D) with an Adult Organizational Learning and Leadership specialization is available as well.

Educational Leadership

The state and CAEP (Council for the Accreditation of Educator Preparation) accredited Educational Leadership program offers Masters (M.Ed.) and Specialist (Ed.S.) degrees for individuals seeking leadership roles in K-12 education. Principal, Superintendent, and Director of Special Education Certificates may be earned by completing an approved program of study. Courses are offered online with some live classes in designated locations. A doctorate (Ph.D. or Ed.D.) with an Educational Leadership specialization is available as well.

Leadership and Counseling Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Leadership and Counseling. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Adult Organizational Learning and Leadership (M.S.) (p. 231)
- Education (Ph.D.) (p. 231)
- Educational Leadership (Ed.S.Ed.Ldrshp.) (p. 231)
- Educational Leadership (M.Ed.) (p. 232)
- Human Resource Development Graduate Academic Certificate (p. 232)

Adult Organizational Learning and Leadership (M.S.)

Master of Science. Major in Adult/Organizational Learning and Leadership.

General M.S. Requirements apply.

Please see the Leadership and Counseling Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will be able to understand, analyze and apply organization development theory and methods.
2. The student will be able to understand and apply transformative learning processes and strategic thinking.
3. The student will develop personal leadership capacity.
4. The student will demonstrate the ability to facilitate change for healthy organizations.

Education (Ph.D.)

The Education Ph.D. is offered through the College of Education, Health and Human Sciences. (p. 202)

Please see the Graduate Student Handbook for details and program requirements on earning this degree.

1. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates integrate the philosophical foundations, epistemological assumptions, and methodological frameworks of educational and social science research in original lines of scholarly inquiry.
2. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates articulate and demonstrate the ethical, moral, and legal considerations related to conducting educational or social science research.
3. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates respectfully communicate new knowledge through research that results in published work, professional presentations, policy initiatives, organizational changes, professional development or training, or consulting opportunities.
4. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates articulate their purpose for pursuing doctoral education through a professional development plan and identify transformational experiences to assist them in achieving their educational and research goals.
5. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates recognize and apply principles of ethical leadership, collaboration, and respect for diversity in scholarly inquiry to promote positive social change.

Educational Leadership (Ed.S.Ed.Ldrshp)

General Ed.S. requirements apply. The Ed.S.Ed.Ldrshp. in Educational Leadership is offered through the College of Education, Health and Human Sciences. (p. 202)

Please see the Leadership and Counseling Graduate Student Handbook for details and program requirements on earning this degree.

1. Demonstrate advanced proficiency in understanding and applying knowledge and skills appropriate to their professional field of specialization, including the ability to analyze and interpret complex data and research findings to inform system-level decision-making.
2. Conduct advanced qualitative, quantitative, and/or mixed methods research studies relevant to their field of specialization, and use research findings to inform policy and practice at the system level.
3. Design and implement comprehensive strategies to create supportive, diverse, equitable, and inclusive school environments based on advanced data analysis and evidence, and evaluate the impact of these strategies on student learning and development.
4. Lead and/or facilitate collaborative activities with others such as peers, colleagues, teachers, administrators, community organizations, and parents to promote system-wide learning and development opportunities for all P-12 students.
5. Evaluate and select appropriate technology for their field of specialization, and design and implement technology-based systems and programs to enhance teaching, learning, and assessment at the system level.
6. Demonstrate advanced professional dispositions, knowledge of laws and policies, codes of ethics and professional standards appropriate to their field of specialization, and engage in ongoing leadership and professional development to shape policy and practice in the field.

Educational Leadership (M.Ed.)

Applicants for M.Ed. degree are expected to meet the requirements for the teaching certificate and one year of teaching experience.

Master of Education. Major in Educational Leadership.

Educational leadership provides programs for the preparation of school administrators and for persons interested in teaching or administration in institutions of higher learning. Master of Education and Education Specialist degrees with an emphasis in educational leadership and options for a certificate as a principal and/or superintendent may be earned in the department. Ph.D. and Ed.D. with an emphasis in educational leadership and options for a certificate as a principal and/or superintendent may be earned through the college of Education.

Please see the Leadership and Counseling Graduate Student Handbook for details and program requirements on earning this degree.

1. Demonstrate proficiency in understanding and applying knowledge and skills appropriate to their professional field of specialization, including the ability to analyze and interpret data and research findings to inform instructional decision-making.
2. Apply qualitative, quantitative, and/or mixed methods research methodologies to design and conduct research studies relevant to their field of specialization.
3. Develop and implement strategies to create supportive, diverse, equitable, and inclusive school environments based on data analysis and evidence.
4. Lead and/or participate in collaborative activities with others such as peers, colleagues, teachers, administrators, community organizations, and parents to enhance learning and development opportunities for all P-12 students.

5. Utilize appropriate technology for their field of specialization to enhance teaching and learning, including the ability to design and implement technology-based learning environments and to use technology for assessment and evaluation.
6. Demonstrate professional dispositions, knowledge of laws and policies, codes of ethics and professional standards appropriate to their field of specialization, and engage in ongoing professional development to stay current with research and best practices in the field.

Human Resource Development Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
AOLL 510	Foundations of Human Resource Development	3
Select four of the following courses:		12
AOLL 526	Instructional Design and Curriculum	
AOLL 528	Program Planning, Development, and Evaluation	
AOLL 560	Career Development in Organizations	
AOLL 577	Organization Development	
AOLL 581	Theory & Practices & Challenges of Leadership	
AOLL 583	Organizational Leadership	
Total Hours		15

Courses to total 15 credits for this certificate

Department of Movement Sciences

Philip W. Scruggs, Chair (101 Phys. Ed. Bldg. 83844-2401; phone 208-885-7921).

The Department of Movement Sciences is located in the College of Education, Health and Human Sciences. Our mission is to improve movement, health, and well-being through innovative research, transformative learning, and beneficial engagement, while we aspire to cultivate healthy and physically active lifestyles to sustain the well-being of individuals and communities.

The department offers undergraduate Bachelor of Science (B.S.) degrees in Dance; Exercise, Sport, and Health Sciences; and Recreation, Sport and Tourism Management.

- The B.S. in Dance is designed to create a positive, student-focused learning environment that promotes the whole person in preparation for dance careers and careers in related fields, such as professionals in dance education, performance, and therapy. The Festival of Dance and Performing Arts Association is in residency within the department.
- The B.S. in Exercise, Sport, and Health Sciences includes five transcribed emphases: Community Health Education and Promotion; Fitness, Health, and Human Performance; Physical Education Teacher Education; Pre-Athletic Training; and Pre-Physical Therapy. Students are prepared for the many diverse fields of kinesiology, along with post-baccalaureate study in education, allied-clinical health fields, medicine, sport, and fitness. The emphasis area in Physical Education Teaching leads to K-12 teaching certification.

- The B.S. in Recreation, Sport and Tourism Management provides students with professional career options in leisure, recreation, and sport for leadership roles in organizations and communities, such as a recreation outfitter and guide, an events coordinator, a sports and/or fitness facility manager, a director of recreation, a leisure or travel tourism professional, etc.

The department offers graduate programs at the master's and doctoral levels. Doctoral programs include the Doctor of Athletic Training (D.A.T., online with a summer residential component) and Movement Sciences Ph.D. in Education, with specializations in Healthy Active Lifestyles and Exercise Science. The department offers master's degrees in Athletic Training (M.S.A.T., online with a summer residential component), Movement & Leisure Sciences (M.S., online and face-to-face coursework), and Physical Education (M.Ed., online and face-to-face).

Movement Sciences also offers academic and teaching minors, which include: Health Education, Dance, Outdoor Recreation Leadership, Sustainable Tourism and Leisure Enterprises, and Physical Education. The department offers a certificate in Athletic Leadership.

The university-wide Idaho Fitness (I-FIT) Program (i.e., physical and dance activity courses) are delivered by Movement Sciences and include numerous recreational, fitness, dance, aquatic, and sport activity areas.

Majors

- Dance (B.S. Dan.) (p. 235)
- Exercise, Sport and Health Sciences (B.S.) (p. 237) with emphases in Community Health Education and Promotion; Fitness, Health, and Human Performance; Pre-Physical Therapy and Allied Health; Pre-Athletic Training; and Physical Education Teaching.
- Recreation, Sport, and Tourism Management (B.S. Rec.) (p. 244)

Minors

- Dance Minor (p. 237)
- Health Education Teaching Minor (p. 225) (offered through the Department of Curriculum and Instruction)
- Outdoor Recreation Leadership Minor (p. 244)
- Sustainable Tourism and Leisure Enterprises Minor (p. 245)

Certificates

- Athletic Leadership Undergraduate Academic Certificate (p. 233)

Movement Sciences Graduate Program

The Graduate Record Examination is not required for admission to the master's and doctoral programs. However, candidates must fulfill the requirements of the College of Graduate Studies, the College of Education, Health and Human Sciences, and the Department of Movement Sciences. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Physical Education (M.Ed.) (p. 244)
- Athletic Training (M.S.A.T.) (p. 234)
- Movement and Leisure Sciences (M.S.) (p. 243)
- Movement Sciences (Ph.D.) (p. 243)
- Athletic Training (D.A.T.) (p. 234)

Movement Sciences Undergraduate Curricular Requirements

Course required in all majors in the Department of Movement Sciences

Code	Title	Hours
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3

Additional Department Course

The following additional department course is required in the Exercise, Sport, and Health Science (B.S.E.S.H.S.) Physical Education Teacher Certification (PETC) and Community Health Education and Promotion Emphases, and in Exercise Science and Health Certified Health Education Specialist (CHES) certification in the Department of Movement Sciences, and offered as electives in the Recreation (B.S.Rec.) degree.

Code	Title	Hours
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3

Athletic Leadership Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
PEP 475	Moral Reasoning in Sport	2
Select 7-9 credits of Leadership electives:		7-9
INTR 210	College Success Strategies for Student-Athletes	
INTR 401	Career and Leadership Development	
ISEM 101		
ISEM 301		
IS 350	Sports and International Affairs	
PEP 301	Mental Training	
PEP 305	Applied Sports Psychology	
Select 1-3 credits of Athletic, Recreation, Performing Art, Fitness electives:		1-3
DAN 105	Dance	
IFIT 106	Fitness and Wellness	
IFIT 107	Individual and Team Sports	
IFIT 108	Water-Based Fitness and Sports	
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
RSTM 108	Orienteering & Navigation	
RSTM 222	Cross Country Skiing	
RSTM 224	Whitewater Rafting	
RSTM 225	Kayaking	

RSTM 227	Mountain Biking
Total Hours	10-14

Courses to total 12 credits for this certificate

Athletic Training (D.A.T.) Doctor of Athletic Training. Major in Athletic Training.

The department offers a D.A.T. program. This program is designed for certified athletic trainers who are interested in improving their clinical practice through a structured academic program with a clinical practice residency. Please contact the department for any inquiries in this program.

Code	Title	Hours
AT 606	Professional and Post-Professional Education in Athletic Training	3
AT 610	Advances in Manual Therapy	3
AT 611	Integrative Manual Therapy	3
AT 620	Research Methods and Evidence Based Practice in Patient Care	3
AT 621	Action Research in Patient Care	2
AT 622	Designing and Conducting Applied Research in Patient Care	2
AT 623	Introduction to Survey and Qualitative Research Design in Patient Care	3
AT 624	Advanced Quantitative Data Analysis and Interpretation in Patient Care	3
AT 625	Scientific Writing for Publication in Patient	3
AT 630	Holistic Foundations of Pain in Patient Care	2
AT 631	Theory and Application of Current and Novel Paradigms in Patient Care	2
AT 632	Integrative Patient Care for the Spine and Pelvic Girdle	3
AT 633	Application of Advanced Practice Skills: A Practice-Based Approach	3
AT 634	Introduction to Quantitative Data Analysis and Interpretation in Patient Care	2
AT 635	Intermediate Quantitative Data Analysis and Interpretation in Patient Care	2
AT 640	Clinical Residency and Analysis of Patient Care I	6
AT 641	Clinical Residency and Analysis of Patient Care II	6
AT 642	Clinical Residency and Analysis of Patient Care III	6
AT 643	Clinical Residency and Analysis of Patient Care IV	6
Total Hours		63

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

1. The D.A.T. student will improve their clinical practice through the Foundational Behaviors of Post-Professional Practice.
2. The D.A.T. student will improve their clinical practice by becoming a more scholarly practitioner.

3. The D.A.T. student will improve their clinical practice by contributing to the research and advancing knowledge in AT clinical practice.

Athletic Training (M.S.A.T.) Master of Science in Athletic Training. Major in Athletic Training.

The M.S.A.T. is an entry level program designed to prepare students to become a certified athletic trainer. After successful completion of this program, students will be eligible for the athletic training national Board of Certification Exam.

M.S.A.T. Admission Requirements.

Students are eligible to apply for admission to the MSAT program via two distinct routes:

Students who have obtained a bachelor's degree (3.0 or >3.0) and the required prerequisite coursework (4 credit hours of human anatomy or equivalent & 4 credit hours of human physiology or equivalent) are eligible for consideration of admission to the MSAT.

OR

Students who are enrolled in an academic institution with whom the University of Idaho and the MSAT have a 3+2 transitional program articulation¹ agreement may apply to the MSAT during their junior year of study for entrance in early summer with Tentative Admittance². Students must be approved for application to the 3+2 program from their specified undergraduate program director (and have met the criteria within the articulation agreement) before they apply to the MSAT.³

1

Students in the Pre-Athletic Training Emphasis who are admitted into the MSAT program after their junior year may count up to 30 credits of graduate level coursework from the first year of the MSAT program towards the upper-division requirement (see J-1-b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) of the BSESHS degree in Exercise, Sport, and Health Sciences with an Athletic Training Emphasis. Up to 8 of 30 credits of graduate level course work from the first year of the MSAT program may be counted towards the residency requirements (see J-2 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) for the BSESHS degree. For more information on the MSAT, see the Graduate Degree Programs section for this department.

2

Students may be admitted to the MSAT "Tentatively" without first having had completed a Bachelor's degree. These students will apply the first two semesters of the MSAT curriculum to their undergraduate degree in order to satisfy their Bachelor's degree requirements. Students will apply for graduation during the Fall of their first year in the MSAT program and will have the "Tentative Admittance" removed upon fulfilling all requirements of their Bachelor's degree program.

3

The 3+2 program will meet all other admission standards set forth by the College of Graduate Studies and the Masters of Science in Athletic Training Program.

The M.S.A.T. in Athletic Training requires the following courses:

Code	Title	Hours
AT 506	Clinical Anatomy I	3
AT 507	Emergency Management and Care of Injuries and Illnesses	3
AT 508	Evaluation and Diagnosis of Injuries and Illnesses I	4
AT 509	Principles of Rehabilitation	3
AT 510	Therapeutic Modalities	2
AT 511	Ethics and Administration in Athletic Training	3
AT 512	Research Methods & Statistics I	3
AT 513	General Medicine for Athletic Trainers	3
AT 514	Psychology of Injury and Referral	3
AT 516	Diagnostic Imaging and Testing in Athletic Training	1
AT 520	Clinical Education I	2
AT 521	Clinical Experience I	4
AT 522	Clinical Education II	2
AT 523	Clinical Experience II	4
AT 531	Clinical Anatomy II	3
AT 532	Evaluation and Diagnosis of Injuries and Illnesses II	4
AT 533	Integrated Rehabilitation Techniques	3
AT 534	Therapeutic Modalities II	2
AT 535	Seminar in Athletic Training	1
AT 536	Research Methods & Statistics II	3
AT 540	Pharmacology for Athletic Trainers	3
AT 541	Seminar in Athletic Training II	2
AT 542	Scientific Inquiry and Research Presentation	3
AT 543	Neuroscience for Athletic Trainers	3
AT 547	Critical Issues in Athletic Training Clinical Practice	3
AT 550	Clinical Education III	2
AT 551	Clinical Experience III	4
AT 552	Clinical Education IV	2
AT 553	Clinical Experience IV	4
AT 587	Prevention and Health Promotion in Athletic Training	3
Total Hours		85

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience. Persons interested in doctoral study should visit the College of Education, Health, and Human Sciences and departmental web page for more information about admission requirements and application procedures.

1. Students properly demonstrate the affective, cognitive and psychomotor competencies and clinical integrated proficiencies.
2. Students use effective communication skills in disseminating information accurately and professionally.
3. Students convert didactic knowledge into clinical skills and appropriate clinical decision-making abilities.
4. The student will be able to work with, and provide care for, a diverse patient population.
5. Students employ professional skills necessary for the athletic training work force.

6. The student will sit for, and pass, the Board of Certification exam to become an athletic trainer.

7. The student will model and facilitate a lifestyle of health and wellness.

8. The student will be able to incorporate literature evidence and practice-based evidence into their patient care.

9. The student will be able to collect and incorporate outcomes measures to evaluate and improve clinical practice.

10. The student will be able to treat patients from multiple clinical paradigms.

Dance (B.S.Dan.)

A successful audition is required for admission to the degree program. To graduate in this program, a minimum grade of 'C' must be earned in all required courses. To participate in departmental productions, a student must maintain a minimum GPA of 2.50. Please contact the Department of Movement Sciences at 208-885-7921 for audition information. Required coursework includes the university requirements (see regulation J-3 (p. 78)), the Department of Movement Sciences core course MVSC 201 and the following course work:

Code	Title	Hours
	Movement Sciences Undergraduate Curricular Requirements	3
	Major Requirements	67-68
Total Hours		70-71

Major Requirements

Code	Title	Hours
BIOL 227	Anatomy and Physiology I	4
DAN 101	Dance Seminar (2 classes required)	2
DAN 210	Dance Performance (4 credits required)	4
DAN 211	Dance Conditioning (2 classes required)	2
DAN 284	Dance Improvisation	1
DAN 321	Dance Pedagogy	3
DAN 324	Integrated Movement Practices	3
DAN 360	Teaching Creative Dance and Dance Integration for Children (2 credits required)	2
DAN 384	Dance Composition I	3
DAN 385	Dance Composition II	3
DAN 410	Pre-professional Dance Performance (4 credits required)	4
DAN 412	Choreography Lab	2
DAN 421	Dance History and Contemporary Views	3
DAN 422	Labanalysis	3
DAN 490	Senior Project	2
Select 16 credits of Technique: ¹		16
DAN 216	Technique	
DAN 416	Technique	
Select two courses from the following:		6
PEP 300	Applied Human Anatomy and Biomechanics	
PEP 360	Motor Behavior	
PEP 409	Concepts in Strength and Conditioning	

PEP 430	Activity and Health in Movement and Leisure Sciences	
PEP 459	Sport Nutrition	
H&S 328	Community Health: Theory, Systems, and Practice	
EDCI 301	Learning, Development, and Assessment	
PSYC 305	Developmental Psychology	
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	
MKTG 321	Marketing	
Other upper division courses may be possible with program approval		
Select two courses from the following:		2
MUSA 114	Studio Instruction	
MUSA 145	Piano Class for Music Majors/Minors	
MUSA 146	Piano Class for Music Majors/Minors	
MUSA 365	Chamber Ensemble	
Select one course from the following:		2-3
THE 105	Basics of Performance I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
THE 320	Theatre Management	

Total Hours 67-68

1

Must include a minimum of 6 semesters each of ballet and modern. Students may retake the same technique class up to 8 times and/or supplement their training in DAN 216/DAN 416 course offerings to meet their 16-credit requirement). Students must take a minimum of 2 semesters of DAN 416 in both ballet and modern.

Courses to total 120 credits for this degree

Fall Term 1		Hours
DAN 100	Dance in Society	3
DAN 101 or DAN 284	Dance Seminar or Dance Improvisation	1
DAN 210 or DAN 410	Dance Performance or Pre-professional Dance Performance	1
DAN 216	Technique	1
DAN 216	Technique	1
ENGL 101	Writing and Rhetoric I	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3

Hours 16

Spring Term 1		Hours
DAN 210	Dance Performance	1
DAN 211	Dance Conditioning	1
DAN 216	Technique	1
DAN 216	Technique	1
DAN 384 or MVSC 201	Dance Composition I or Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
ENGL 102	Writing and Rhetoric II	3
(BIOL 102 AND BIOL 102L) OR (BIOL 115 AND BIOL 115L)		4

Hours 14

Fall Term 2		Hours
BIOL 227	Anatomy and Physiology I	4
DAN 101 or DAN 284	Dance Seminar or Dance Improvisation	1

DAN 210 or DAN 410	Dance Performance or Pre-professional Dance Performance	1
DAN 216	Technique	1
DAN 216	Technique	1
DAN 360	Teaching Creative Dance and Dance Integration for Children	2
DAN 385 or DAN 324	Dance Composition II or Integrated Movement Practices	3
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles (OR Social and Behavioral Ways of Knowing Course)	3

Hours 16

Spring Term 2		Hours
DAN 210 or DAN 410	Dance Performance or Pre-professional Dance Performance	1
DAN 211	Dance Conditioning	1
DAN 216	Technique	1
DAN 216	Technique	1
DAN 321 or DAN 384	Dance Pedagogy or Dance Composition I	3
MUSA 114 OR MUSA 145 OR MUSA 146 OR MUSA 365		1
Scientific Ways of Knowing Course		4
Humanistic and Artistic Ways of Knowing Course		3

Hours 15

Fall Term 3		Hours
DAN 101	Dance Seminar (or Elective Course)	1
DAN 410 or DAN 210	Pre-professional Dance Performance or Dance Performance	1
DAN 416	Technique	1
DAN 416	Technique	1
DAN 324 or DAN 385	Integrated Movement Practices or Dance Composition II	3
DAN 421 OR THE 105 OR THE 202 OR THE 205 OR THE 320		3
PEP 300	Applied Human Anatomy and Biomechanics	3
Elective Courses		2

Hours 15

Spring Term 3		Hours
DAN 210 or DAN 410	Dance Performance or Pre-professional Dance Performance	1
DAN 216	Technique	1
DAN 416	Technique	1
DAN 416	Technique	1
DAN 412	Choreography Lab	2
DAN 422 or DAN 321	Labanalysis or Dance Pedagogy	3
PEP 360	Motor Behavior	3
Social and Behavioral Ways of Knowing Course		3

Hours 15

Fall Term 4		Hours
DAN 101	Dance Seminar (or Elective Course)	1
DAN 410	Pre-professional Dance Performance	1
DAN 216	Technique	1
DAN 416	Technique	1
DAN 416	Technique	1
DAN 421 OR THE 105 OR THE 202 OR THE 205 OR THE 320		3
Social and Behavioral Ways of Knowing or Elective Course		3
Elective Course(s)		3

Hours 14

Spring Term 4		Hours
DAN 211	Dance Conditioning	1
DAN 410	Pre-professional Dance Performance	1
DAN 216	Technique	1
DAN 416	Technique	1

DAN 416	Technique	1
DAN 490	Senior Project	2
MUSA 114 OR MUSA 145 OR MUSA 146 OR MUSA 365		1
International Course		3
Elective Course(s)		4
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will demonstrate conceptual knowledge of the significance of dance in society and cultures, historical dance developments, and evolving contemporary practices.
2. Students will demonstrate physical and intellectual knowledge of contemporary dance movement practices and techniques: modern, ballet, and improvisation, with exposure to vernacular dance forms.
3. Students will demonstrate an understanding of the theory and practice of dance pedagogy, including curriculum design, classroom culture and management, and instructional planning, as well as pedagogical reflection.
4. Students will demonstrate an understanding of the choreographic elements and tools, creative processes, dance research, dance performance, and concert production through practical experiences and related course requirements.
5. Students will be able to summarize the importance of interdisciplinary collaborations; how dance relates, informs, connects, and transfers to other disciplines and communities.
6. Students will be able to formulate connections between dance and healthy living; demonstrate through written and performance artifacts the artistic value and science of dance as it relates to movement efficiency and effectiveness, injury prevention, wellness, and community engagement.
7. Students will understand dance as a universal, non-verbal form of communication; demonstrate knowledge of the language, literacy, and critical analysis of dance including motif writing, movement analysis, dance and anatomical terminology, and criticism.

Dance Minor

Code	Title	Hours
DAN 210	Dance Performance	2
DAN 211	Dance Conditioning	1
DAN 284	Dance Improvisation	1
DAN 321	Dance Pedagogy	3
DAN 360	Teaching Creative Dance and Dance Integration for Children	2
DAN 384	Dance Composition I	3
DAN 421	Dance History and Contemporary Views	3
Select one of the following:		3
DAN 324	Integrated Movement Practices	
DAN 385	Dance Composition II	
DAN 422	Labanalysis	
Select 6 credits from Ballet or Modern		6

DAN 216	Technique	
DAN 416	Technique	
Select 2 credits from other dance idioms		2
DAN 216	Technique	
DAN 416	Technique	
Total Hours		26

Courses to total 26 credits for this minor

Exercise, Sport and Health Sciences (B.S.)

Acceptance into the Teacher Education program for the Physical Education Track requires a minimum GPA of 2.75.

Required course work includes the university requirements (see regulation J-3 (p. 78)), the Department of Movement Sciences core course MVSC 201, and the following:

Major Requirements

Code	Title	Hours
BIOL 227	Anatomy and Physiology I	4
BIOL 228	Anatomy and Physiology II	4
H&S 451	Psychosocial Determinants of Health	3
or H&S 450	Critical Health Issues	
PEP 100	Introduction to Exercise Science and Health	1
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 418	Physiology of Exercise	3
PEP 493	Fitness Assessment and Prescription	3

Emphases

Select one of the following emphases: 27-49

Community Health Education and Promotion (<https://catalog.uidaho.edu/colleges-related-units/education-health-human-sciences/movement-sciences/exercise-science-health-bsesh/#communityhealtheducationandpromotion>)

Fitness, Health, and Human Performance (<https://catalog.uidaho.edu/colleges-related-units/education-health-human-sciences/movement-sciences/exercise-science-health-bsesh/#fitnesshealthhumanperformance>)

Pre-Physical Therapy & Allied Health (<https://catalog.uidaho.edu/colleges-related-units/education-health-human-sciences/movement-sciences/exercise-science-health-bsesh/#prephysicaltherapy>)

Pre-Athletic Training (<https://catalog.uidaho.edu/colleges-related-units/education-health-human-sciences/movement-sciences/exercise-science-health-bsesh/#preathletictraining>)

Physical Education Teacher Certification (<https://catalog.uidaho.edu/colleges-related-units/education-health-human-sciences/movement-sciences/exercise-science-health-bsesh/#physicaleducationteachercertification>)

Total Hours 48-70

A. Community Health Education and Promotion Emphasis

Code	Title	Hours
FN 205	Concepts in Human Nutrition	3
H&S 301	Peer Health Education	2
H&S 328	Community Health: Theory, Systems, and Practice	3
H&S 423	Health Education Methods	3
H&S 450	Critical Health Issues	3
H&S 451	Psychosocial Determinants of Health	3
H&S 490	Health Promotion	3
H&S 498	Internship	6-9
MVSC 445	Internship Preparation and Professional Development	1
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
PEP 495 & 495	Practicum and Practicum (Two at 1 credit each)	2
STAT 251	Statistical Methods	3
Select 3 Credits of PE Activity/Skill Analysis Classes (See advisor for selection)		3
Select one of the following		1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
Total Hours		42-45

Courses to total 120 credits for this degree

B. Fitness, Health, and Human Performance Emphasis

Code	Title	Hours
MVSC 445	Internship Preparation and Professional Development	1
PEP 360	Motor Behavior	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
PEP 495 & 495	Practicum and Practicum (Two at 1 credit each)	2
PEP 498	Internship in Exercise Science & Health	6-9
Select 9 credits from the following		9
H&S 450	Critical Health Issues	
FN 205	Concepts in Human Nutrition	
H&S 451	Psychosocial Determinants of Health	
H&S 490	Health Promotion	
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	
Select 9 credits from the following		9
H&S 245	Introduction to Athletic Injuries	
PEP 305	Applied Sports Psychology	

PEP 459	Sport Nutrition	
PEP 407	Sport Biomechanics	
PEP 409	Concepts in Strength and Conditioning	
Select 3 credits of PE Activity/Skill Classes (see advisor for selection).		3
Select one of the following:		1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	
Total Hours		37-40

Courses to total 120 credits for this degree

C. Pre-Physical Therapy and Allied Health Emphasis

Code	Title	Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
MVSC 445	Internship Preparation and Professional Development	1
PEP 495 & 495	Practicum and Practicum (Two at 1 credit each)	2
PEP 360	Motor Behavior	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
PEP 498	Internship in Exercise Science & Health	6-9
PSYC 305	Developmental Psychology	3
or PSYC 311	Abnormal Psychology	
STAT 251	Statistical Methods	3
Select 12 credits from the following		12
FN 205	Concepts in Human Nutrition	
H&S 232	Medical Terminology	
H&S 245	Introduction to Athletic Injuries	
H&S 328	Community Health: Theory, Systems, and Practice	
H&S 450	Critical Health Issues	
H&S 451	Psychosocial Determinants of Health	
H&S 490	Health Promotion	
PEP 305	Applied Sports Psychology	
PEP 459	Sport Nutrition	
PEP 407	Sport Biomechanics	
PEP 409	Concepts in Strength and Conditioning	
Select 3 credits from the following		3
BIOL 114	Organisms and Environments	
BIOL 250	General Microbiology	
BIOL 255	General Microbiology Lab	
BIOL 310	Genetics	
BIOL 380	Biochemistry I	
CHEM 112	General Chemistry II	
CHEM 112L	General Chemistry II Laboratory	

CHEM 277	Organic Chemistry I	
CHEM 278	Organic Chemistry I: Lab	
PHYS 111	General Physics I	
PHYS 111L	General Physics I Lab	
PSYC 372	Physiological Psychology	
Select 3 credits of PE Activity/Skill Classes (see advisor for selection).		3
Select one of the following		1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	

Total Hours 48-51

Courses to total 120 credits for this degree

D. Pre-Athletic Training Emphasis

Code	Title	Hours
H&S 245	Introduction to Athletic Injuries	3
PEP 171	Athletic Training Clinical Experience I - Observation	1
PEP 360	Motor Behavior	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
PEP 495	Practicum	1
AT 506	Clinical Anatomy I	3
AT 507	Emergency Management and Care of Injuries and Illnesses	3
AT 508	Evaluation and Diagnosis of Injuries and Illnesses I	4
AT 509	Principles of Rehabilitation	3
AT 510	Therapeutic Modalities	2
AT 511	Ethics and Administration in Athletic Training	3
AT 512	Research Methods & Statistics I	3
AT 520	Clinical Education I	2
AT 521	Clinical Experience I	4
AT 587	Prevention and Health Promotion in Athletic Training	3
Select 3 credits from the following		3
PEP 305	Applied Sports Psychology	
PEP 407	Sport Biomechanics	
PEP 409	Concepts in Strength and Conditioning	
PEP 459	Sport Nutrition	

Total Hours 44

Courses to total 120 credits for this degree

1

Students in the Pre-Athletic Training Emphasis who are admitted into the MSAT program after their junior year may count up to 30 credits of graduate level course work from the first year of the MSAT program towards the upper division requirement (see J-1-b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) of their BSESHS degree in Exercise, Sport, and Health Sciences with an Athletic Training Emphasis. Up to 8 of 30 credits of graduate level course work from the first year of the MSAT program may be counted towards the residency requirement (see J-2 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) for the BSESHS degree. For more information on the MSAT see the Graduate Degree Programs section for this department.

E. Physical Education Teacher Certification Emphasis

Code	Title	Hours
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDCI 302	Teaching Culturally Diverse Learners	3
EDCI 401	Internship Seminar	1
EDCI 463	Literacy Methods for Content Learning	3
FN 205	Concepts in Human Nutrition	3
H&S 245	Introduction to Athletic Injuries	3
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 360	Motor Behavior	3
PEP 412	Elementary Methods in Physical Activity Pedagogy	3
PEP 413	Foundations and Assessment in Physical Activity Pedagogy	3
PEP 421	Secondary Methods in Physical Activity Pedagogy	3
PEP 424	Inclusive Physical Education and Recreation	3
PEP 484	Internship in Physical Education Teaching (14 credits required)	14
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
Select 5 credits from the following:		5
IFIT 108	Water-Based Fitness and Sports	
PEP 107	Movement Fundamentals	
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	
PEP 133	Skill and Analysis of Target and Invasion Activities	
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	

Total Hours 59

Courses to total 120 credits for this degree

Additional Requirements for Health Certification

Code	Title	Hours
H&S 423	Health Education Methods	3
H&S 450	Critical Health Issues	3
H&S 451	Psychosocial Determinants of Health	3
H&S 490	Health Promotion	3
HDFS 240 or PSYC 330	Intimate Relationships Human Sexuality	3
Total Hours		15

Community Health Education and Promotion Emphasis

Fall Term 1		Hours
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
PEP 100	Introduction to Exercise Science and Health	1
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
Social and Behavioral Ways of Knowing Course		3
Mathematical Ways of Knowing Course		3
Hours		17
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
FN 205	Concepts in Human Nutrition	3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Scientific Ways of Knowing Course		4
Hours		16
Fall Term 2		
BIOL 227	Anatomy and Physiology I	4
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
American Diversity Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
PEP 132, 133 or 134		1
Hours		17
Spring Term 2		
BIOL 228	Anatomy and Physiology II	4
STAT 251	Statistical Methods	3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
PE Activity/Skill		1
Hours		14
Fall Term 3		
H&S 301	Peer Health Education	2
H&S 328	Community Health: Theory, Systems, and Practice	3
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 418	Physiology of Exercise	3
PEP 495	Practicum	1
Elective Course		2
Hours		14
Spring Term 3		
H&S 451	Psychosocial Determinants of Health	3
H&S 490	Health Promotion	3
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 360	Motor Behavior	3
PEP 455	Design & Analysis of Research in Movement Sciences	3

PE Activity/Skill		1
Hours		16
Fall Term 4		
H&S 423	Health Education Methods	3
H&S 450	Critical Health Issues	3
MVSC 445	Internship Preparation and Professional Development	1
PEP 493	Fitness Assessment and Prescription	3
PEP 495	Practicum	1
PE Activity/Skill Course		1
Elective		2
Hours		14
Spring Term 4		
H&S 498	Internship	9
Elective Course		3
Hours		12
Total Hours		120

Fitness, Health, and Human Performance Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
PEP 100	Introduction to Exercise Science and Health	1
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
PE Activity/Skill, 1 credit Major Elective Course		1
Mathematical Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 1		
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
FN 205	Concepts in Human Nutrition	3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
PE Activity/Skill, 1 credit Major Elective Course		1
Hours		16
Fall Term 2		
BIOL 227	Anatomy and Physiology I	4
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
Humanistic and Artistic Ways of Knowing Course		3
PE Activity/Skill, 1 credit Major Elective Course		1
Scientific Ways of Knowing Course		4
Hours		15
Spring Term 2		
BIOL 228	Anatomy and Physiology II	4
H&S 245	Introduction to Athletic Injuries	3
PEP 305	Applied Sports Psychology	3
Social and Behavioral Ways of Knowing Course		3
Elective Course		2
Hours		15
Fall Term 3		
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 418	Physiology of Exercise	3
PEP 495	Practicum	1
American Diversity Course		3
Elective Course		3
PEP 132 OR PEP 133 OR PEP 134		1
Hours		14
Spring Term 3		
H&S 451 or H&S 450	Psychosocial Determinants of Health or Critical Health Issues	3

PEP 360	Motor Behavior	3
PEP 493	Fitness Assessment and Prescription	3
H&S 490	Health Promotion	3
Elective Course		3
Hours		15
Fall Term 4		
MVSC 445	Internship Preparation and Professional Development	1
PEP 407	Sport Biomechanics	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
PEP 495	Practicum	1
Elective Course		3
Elective Course		3
PE Activity/Skill Class		1
Hours		15
Spring Term 4		
PEP 498	Internship in Exercise Science & Health	9
Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

Pre-Physical Therapy & Allied Health Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
PEP 100	Introduction to Exercise Science and Health	1
PSYC 101	Introduction to Psychology	3
PE Activity/Skill, 1 credit Major Elective Course		1
Elective Course		3
Elective Course		1
MATH 143 OR MATH 160 OR MATH 170		3
Hours		15
Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
STAT 251	Statistical Methods	3
FN 205 OR H&S 232 OR H&S 245 OR H&S 328 OR H&S 450 OR H&S 451 OR H&S 490 OR PEP 305 OR PEP 459 OR PEP 407 OR PEP 409		3
PEP 132 OR PEP 133 OR PEP 134		1
Hours		17
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
BIOL 114 OR BIOL 250 OR BIOL 255 OR BIOL 310 OR BIOL 380 OR CHEM 112 OR CHEM 112L OR CHEM 277 OR CHEM 278 OR PHYS 111 OR PHYS 111L		3
PE Activity/Skill, 1 credit Major Elective Course		1
Humanistic and Artistic Ways of Knowing Course		3
Hours		14
Spring Term 2		
H&S 245	Introduction to Athletic Injuries	3
PE Activity/Skill, 1 credit Major Elective Course		1
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Elective Course		3
Elective Course		2
Hours		15
Fall Term 3		
BIOL 227	Anatomy and Physiology I	4
PEP 300	Applied Human Anatomy and Biomechanics	3

PEP 418	Physiology of Exercise	3
PEP 495	Practicum	1
American Diversity Course		3
Hours		14
Spring Term 3		
BIOL 228	Anatomy and Physiology II	4
H&S 451 or H&S 450	Psychosocial Determinants of Health or Critical Health Issues	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
PEP 360	Motor Behavior	3
Social and Behavioral Ways of Knowing Course		3
Hours		16
Fall Term 4		
MVSC 445	Internship Preparation and Professional Development	1
PEP 493	Fitness Assessment and Prescription	3
PEP 495	Practicum	1
PSYC 305 OR PSYC 311		3
FN 205 OR H&S 232 OR H&S 245 OR H&S 328 OR H&S 450 OR H&S 451 OR H&S 490 OR PEP 305 OR PEP 459 OR PEP 407 OR PEP 409		6
Hours		14
Spring Term 4		
PEP 498	Internship in Exercise Science & Health	9
Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

Pre-Athletic Training Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
COMM 101	Fundamentals of Oral Communication	3
PEP 100	Introduction to Exercise Science and Health	1
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
Mathematical Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		17
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
American Diversity Course		3
Elective Course		2
Hours		15
Fall Term 2		
BIOL 227	Anatomy and Physiology I	4
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
International Course		3
PEP 305 OR PEP 407 OR PEP 409 OR PEP 459		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Spring Term 2		
BIOL 228	Anatomy and Physiology II	4
H&S 245	Introduction to Athletic Injuries	3
PEP 171	Athletic Training Clinical Experience I - Observation	1
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
1 credit Elective Course		1
Hours		15
Fall Term 3		
PEP 300	Applied Human Anatomy and Biomechanics	3

PEP 418	Physiology of Exercise	3
PEP 455	Design & Analysis of Research in Movement Sciences	3
Elective Course		3
1 credit Elective Course		1
Hours		13
Spring Term 3		
H&S 451 or H&S 450	Psychosocial Determinants of Health or Critical Health Issues	3
PEP 360	Motor Behavior	3
PEP 493	Fitness Assessment and Prescription	3
PEP 495	Practicum	1
Elective Course		3
1 credit Elective Course		1
Hours		14
Fall Term 4		
AT 506	Clinical Anatomy I	3
AT 507	Emergency Management and Care of Injuries and Illnesses	3
AT 508	Evaluation and Diagnosis of Injuries and Illnesses I	4
AT 509	Principles of Rehabilitation	3
AT 510	Therapeutic Modalities	2
Hours		15
Spring Term 4		
AT 511	Ethics and Administration in Athletic Training	3
AT 512	Research Methods & Statistics I	3
AT 520	Clinical Education I	2
AT 521	Clinical Experience I	4
AT 587	Prevention and Health Promotion in Athletic Training	3
Hours		15
Total Hours		120

Physical Education Teacher Certification

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
PEP 100	Introduction to Exercise Science and Health	1
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
PEP 132	Skill and Analysis of Striking and Net/Wall Activities	1
Mathematical Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 1		
COMM 101	Fundamentals of Oral Communication	3
EDCI 201	Contexts of Education	3
ENGL 102	Writing and Rhetoric II	3
PEP 107	Movement Fundamentals	1
PEP 133	Skill and Analysis of Target and Invasion Activities	1
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Hours		17
Fall Term 2		
BIOL 227	Anatomy and Physiology I	4
EDCI 301	Learning, Development, and Assessment	3
FN 205	Concepts in Human Nutrition	3
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
PEP 134	Skill and Analysis of Recreation and Outdoor Activities	1
International Course		3
Hours		17
Spring Term 2		
BIOL 228	Anatomy and Physiology II	4
H&S 245	Introduction to Athletic Injuries	3

PEP 360	Motor Behavior	3
EDCI 302	Teaching Culturally Diverse Learners	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Fall Term 3		
PEP 300	Applied Human Anatomy and Biomechanics	3
PEP 418	Physiology of Exercise	3
PEP 424	Inclusive Physical Education and Recreation	3
IFIT 108	Water-Based Fitness and Sports	1
ENGL 207 OR ENGL 208 OR ENGL 313 OR ENGL 317		3
IFIT 108 OR PEP 107 OR PEP 132 OR PEP 133 OR PEP 134		1
Hours		14
Spring Term 3		
H&S 451	Psychosocial Determinants of Health	3
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	3
PEP 413	Foundations and Assessment in Physical Activity Pedagogy	3
PEP 421	Secondary Methods in Physical Activity Pedagogy	3
Hours		12
Fall Term 4		
EDCI 463	Literacy Methods for Content Learning	3
PEP 412	Elementary Methods in Physical Activity Pedagogy	3
PEP 493	Fitness Assessment and Prescription	3
Elective Course		3
Elective Course		2
Hours		14
Spring Term 4		
EDCI 401	Internship Seminar	1
PEP 484	Internship in Physical Education Teaching	14
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates will be able to understand the biological, sociological, and psychological contributions, consequences, and conditions of health and exercise behavior.
2. Graduates will be able to critically evaluate current trends, information, sources, and research related to exercise, sport, and health sciences.
3. Graduates will be able to integrate and apply knowledge, skills, and critical thinking to assess and plan for individual and community physical activity, health, and wellness.

For Physical Education Teacher Certification Emphasis

1. The student understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.
2. The student uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

3. The student works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

4. The student understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.

5. The student understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

6. The student understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.

7. The student plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

8. The student understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful ways.

9. The student engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

10. The student seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth, and to advance the profession.

11. The teacher candidate should be able to distinguish between each of the federally recognized tribes with respect to the retention of their ancestral lands in Idaho: Coeur d'Alene Tribe, Kootenai Tribe of Idaho, Nez Perce Tribe, Shoshone Bannock Tribes, and the Shoshone Paiute Tribes. Teacher candidates build capacity in learners to utilize the assets that each learner brings to the learning community based on their backgrounds and experiences.

12. The teacher understands the Code of Ethics for Idaho Professional Educators and its place in supporting the integrity of the profession.

13. The teacher knows how to use digital technology to create lessons and facilitate instruction and assessment in face to face, blended, and online learning environments to engage students and enhance learning.

Movement and Leisure Sciences (M.S.)

Master of Science. Major in Movement and Leisure Sciences.

This program provides students the skills, tools, and philosophy necessary to be servant leaders in organizations related to physical activity, sport and recreation

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Please see the Movement Sciences Graduate Student Handbook for details and program requirements on earning this degree.

1. Students are able to use inquiry (analytical/critical thinking) skills and techniques to effectively investigate problems and communicate knowledge related to leading healthy active lifestyles.
2. Students will understand the key components of wellness through a holistic perspective in relation to healthy active lifestyles.
3. Students understand the value of effective leadership, marketing, and/or ethics in working with individuals and/or groups to lead healthy active lifestyle experiences.

Movement and Leisure Sciences (Ph.D.)

Doctor of Philosophy. Major in Education.

The department participates in the Ph.D. program in the College of Education, Health and Human Sciences with concentrations in sport pedagogy & character education or exercise science. Sport pedagogy & character education develops individuals who lead, serve, and research learning and teaching as applied to character and value laden issues in physical education and recreation. Exercise science prepares students to teach, conduct research, and provide services related to Exercise Science disciplines in higher education (exercise physiology, sport psychology, motor control, and biomechanics) and other exercise-related institutions.

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Please see the Movement Sciences Graduate Student Handbook for details and program requirements on earning this degree.

1. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates integrate the philosophical foundations, epistemological assumptions, and methodological frameworks of educational and social science research in original lines of scholarly inquiry.
2. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates articulate and demonstrate the ethical, moral, and legal considerations related to conducting educational or social science research.
3. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates respectfully communicate new knowledge through research that results in published work, professional presentations, policy initiatives, organizational changes, professional development or training, or consulting opportunities.
4. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates articulate their purpose for pursuing doctoral education through a professional development plan and identify transformational experiences to assist them in achieving their educational and research goals.

5. University of Idaho College of Education, Health and Human Sciences Ph.D. graduates recognize and apply principles of ethical leadership, collaboration, and respect for diversity in scholarly inquiry to promote positive social change.

Outdoor Recreation Leadership Minor

Code	Title	Hours
RSTM 107	Outdoor Recreation and Adventure Sports	3
RSTM 290	Wilderness First Responder	3
RSTM 310	Outdoor and Adventure Leadership	3
RSTM 411	Expedition Planning and Management	3
Select 6 credits from the following:		6
RSTM 216	River Recreation and Water Craft Safety	
RSTM 218	Rock Climbing & Mountaineering	
RSTM 228	Avalanche Fundamentals	
RSTM 229	Swiftwater Rescue Training	
RSTM 280	Practicum in Recreation, Sport, and Tourism	
RSTM 408	Experiential Education and Adventure Recreation	
Select 4 credits from the following:		4
IFIT 106	Fitness and Wellness ¹	
IFIT 108	Water-Based Fitness and Sports	
RSTM 108	Orienteering & Navigation	
RSTM 204/404	Special Topics	
RSTM 222	Cross Country Skiing	
RSTM 224	Whitewater Rafting	
RSTM 225	Kayaking	
RSTM 227	Mountain Biking	
RSTM 231	Alpine Skiing	
RSTM 299/499	Directed Study	
Total Hours		22

¹

Wall Climbing, Advanced Wall Climbing, Fly Tying, Fly Fishing, Intro Archery/Hunting, Archery, Scuba, Mountain Biking.

Courses to total 22 credits for this minor

Physical Education (M.Ed.) Master of Education. Major in Physical Education.

This program has two tracks available. The first track is designed to provide post-baccalaureate certification in teaching K-12 physical education. The second track is delivered 100% online and is designed for certified teachers who are interested in improving their teaching practice in physical education.

The department also participates in the interdisciplinary M.S. and Ph.D. in Neuroscience and the M.S. in Bioregional Planning and Community Development. Persons interested in doctoral study should visit the College of Education and departmental web page for more information about admission requirements and application procedures.

Please see the Movement Sciences Graduate Student Handbook for details and program requirements on earning this degree.

1. Graduates will successfully disseminate a research or service learning project related to enhancing healthy active lifestyles in the local schools or community.
2. Graduates will be able to select and adapt curriculum in light of curriculum standards, theories, and models.
3. Graduates understand the principles of instruction, know a wide variety of teaching and learning strategies, and use technologically sound practices to teach core concepts, skills of inquiry, problem solving, collaboration, and communication.
4. Graduates analyze and understand the roles of multiple assessments for monitoring and evaluating student learning in order to modify instruction; they can develop and critique formal, informal, and performance assessment techniques, including local, state, and national assessment systems.
5. Graduates, as critical consumers and producers of scholarship, appreciate the role of educational research and outreach and engagement for collecting, analyzing, and sharing data.

Recreation, Sport, and Tourism Management (B.S.Rec.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and the following coursework:

Code	Title	Hours
Core Course Requirements		
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
RSTM 104	Recreation, Sport, and Tourism in Healthy Communities	3
RSTM 280	Practicum in Recreation, Sport, and Tourism	1
RSTM 498	Internship in Recreation, Sport, and Tourism	9
Select at least 9 credits from the following:		9
RSTM 106	Introduction to Sport Management	
RSTM 107	Outdoor Recreation and Adventure Sports	
RSTM 424	Inclusive Physical Education and Recreation	
RSTM 425	Programming and Marketing in Movement and Leisure Sciences	
RSTM/PEP 430	Activity and Health in Movement and Leisure Sciences	
RSTM 485	Trends and Policies in Recreation, Sport and Tourism	
Select at least 5 credits from the following:		5
MVSC 486	Healthy Active Lifestyle Assessment and Intervention	
PEP 275/475	Moral Reasoning in Sport	
RSTM 310	Outdoor and Adventure Leadership	
RSTM 380	Principles of Travel and Tourism	
RSTM 408	Experiential Education and Adventure Recreation	
RSTM 490	Experience and Event Management	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 313	Business Writing	

ENGL 317	Technical Writing II	
Select one of the following:		3
COMM 233	Interpersonal Communication	
COMM 335	Intercultural Communication	
COMM 347	Persuasion	
COMM 355	Organizational Communication	
Total Hours		36

Courses to total 120 credits for this degree

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
RSTM 104 Recreation, Sport, and Tourism in Healthy Communities	3
Scientific Ways of Knowing Course	4
Mathematical Ways of Knowing Course	3
Elective Course	2
Hours	15
Spring Term 1	Hours
COMM 101 Fundamentals of Oral Communication	3
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
Scientific Ways of Knowing Course	4
Social and Behavioral Ways of Knowing Course	3
Hours	16
Fall Term 2	Hours
MVSC 201 Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
Elective Course	3
COMM 233 OR COMM 335 OR COMM 347 OR COMM 355	3
Hours	15
Spring Term 2	Hours
RSTM 280 Practicum in Recreation, Sport, and Tourism	1
Social and Behavioral Ways of Knowing Course	3
American Diversity Course	3
Elective Course	3
Elective Course	3
1 credit Elective Course	1
Hours	14
Fall Term 3	Hours
International Course	3
Elective Course	3
Elective Course	3
MVSC 486 OR PEP 275 OR PEP 475 OR RSTM 310 OR RSTM 380 OR RSTM 408 OR RSTM 490	3
RSTM 107 OR RSTM 424 OR RSTM 425 OR RSTM 430 OR RSTM 485	3
Hours	15
Spring Term 3	Hours
Elective Course	3
Elective Course	3
MVSC 486 OR PEP 275 OR PEP 475 OR RSTM 310 OR RSTM 380 OR RSTM 408 OR RSTM 490	3
ENGL 207 OR ENGL 313 OR ENGL 317	3
RSTM 107 OR RSTM 424 OR RSTM 425 OR RSTM 430 OR RSTM 485	3
Hours	15
Fall Term 4	Hours
Elective Course	3
Elective Course	3
Elective Course	3

Elective Course	3
RSTM 107 OR RSTM 424 OR RSTM 425 OR RSTM 430 OR RSTM 485	3
Hours	15
Spring Term 4	Hours
RSTM 498 Internship in Recreation, Sport, and Tourism	9
Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

- Students shall demonstrate the following entry-level knowledge:
 - the nature and scope of the relevant park, recreation, tourism or related professions and their associated industries;
 - techniques and processes used by professionals and workers in these industries; and
 - the foundation of the profession in history, science and philosophy.
- Students shall demonstrate the ability to design, implement, and evaluate services that facilitate targeted human experiences and that embrace personal and cultural dimensions of diversity.
- Students shall demonstrate entry-level knowledge about operations and strategic management/administration in parks, recreation, tourism, and/or related professions.
- Students shall demonstrate, through a comprehensive internship of not less than 400 clock hours and no fewer than 10 weeks, the potential to succeed as professionals at supervisory or higher levels in parks, recreation, tourism, or related organizations.

Sustainable Tourism and Leisure Enterprises Minor

Code	Title	Hours
MKTG 321	Marketing	3
NRS 386	Managing Complex Environmental Systems	3
RSTM 490	Experience and Event Management	3
Select courses from the following:		10-12
ACCT 201	Introduction to Financial Accounting	
ACCT 202	Introduction to Managerial Accounting	
AGEC 477	Law, Ethics, and the Environment	
MKTG 420	Integrated Marketing Communication	
NRS 475	Local and Regional Environmental Planning	
RSTM 104	Recreation, Sport, and Tourism in Healthy Communities	
RSTM 204	Special Topics	
RSTM 254	Camp Leadership in Recreation and Sport	
RSTM 280	Practicum in Recreation, Sport, and Tourism	
Total Hours		19-21

Courses to total 19 credits for this minor

College of Engineering

*Suzanna Long, Dean (124 Janssen Engineering Bldg.; 208-885-6596);
Patricia Colberg, Associate Dean*

The mission of the College of Engineering is to prepare students for global professional practice, for admission to advanced degree programs, for leadership in their public and private lives, and for life-long learning in their chosen professions. We promote discovery, development, and dissemination of knowledge through excellence in research, and provide quality academic courses and continuing education to enhance the capability of practicing professionals. Through our scholarly activity, we have the responsibility to be a major contributor to our state, region, and nation's economic and technology base, while contributing to the body of knowledge for an array of research topics.

Our vision is to be an engine of innovation that integrates student-centered academics, relevant research, and meaningful outreach that advances Idaho and beyond.

The Engineering Profession

Members of the engineering profession use their knowledge of mathematics and the sciences to create useful and economic devices, structures, and systems for the benefit of the earth and its inhabitants. The engineer's talents are used in many ways: design, construction, and operation of public works and utilities systems; planning, construction, and operation of industrial processes and equipment; application of technical products; and creation of devices and systems needed for the support of all human activity, such as food production, transportation, communication, and enhancement of the environment. Many engineers hold responsible managerial positions; others are key members of the interdisciplinary teams that solve the complex technical, economic, and social problems of the world.

The engineering profession recognizes that social, economic, political, and cultural, as well as technical considerations are involved in most of the works in which the modern engineer is engaged. A part of an engineer's education is devoted to the humanities and the social sciences to help relate the technical preparation received to the world today, and to enhance the engineer's role as an educated, responsible citizen.

To qualify as an engineer, one usually undertakes a four-year college program leading to a Bachelor of Science (B.S.) degree in one of the major branches of engineering practice. Bachelor of Science graduates may either go directly into engineering employment or proceed to graduate study to pursue a given area of interest in depth. As the technology of engineering includes a wide range of subject matter that can be explored only to a limited extent in undergraduate programs, more and more students undertake graduate study for better preparation in a specific field before seeking employment as practicing engineers.

All states require that engineers engaged in work affecting public health and welfare be licensed or registered. This requires a qualifying examination in the fundamentals of engineering, usually taken during the last year of undergraduate study, and a period of practical experience followed by a second qualifying examination in the practice of engineering. Many industries, while not legally required to use registered engineers, encourage registration as evidence of professional stature of their engineering employees.

The Computer Science Profession

Computer science is a discipline that involves the understanding and design of computers and computational processes. In its most general form, it is concerned with the understanding of information transfer and transformation. Computer science is evolving rapidly and includes theoretical studies, experimental methods, and engineering design all in one discipline. In computer science, there is an inherent intermingling of the theoretical concepts of computability and algorithmic efficiency with the modern practical advancements in electronics that continue to stimulate advances in the discipline. It is this close interaction of the theoretical and design aspects of the field that binds them together into a single discipline.

Because of the rapid evolution, it is difficult to provide a complete list of computer science areas. Yet it is clear that some of the crucial areas are theory, algorithms and data structures, programming methodology and languages, and computer elements and architecture. Other areas include software engineering, artificial intelligence, computer networking and communication, database systems, parallel computation, distributed computation, computer-human interaction, computer graphics, operating systems, numerical and symbolic computation, and computer security.

A professional computer scientist must have a firm foundation in the crucial areas of the field and will most likely have an in-depth knowledge in one or more of the other areas of the discipline, depending on the person's particular area of practice. Thus, a well-educated computer scientist should be able to apply the fundamental concepts and techniques of computation, algorithms, and computer design to a specific design problem. The work includes detailing of specifications, analysis of the problem, and providing a design that functions as desired, is reliable and maintainable, and meets desired cost criteria. Clearly, the computer scientist must not only have sufficient training in the computer science areas to be able to accomplish such tasks, but must also have a firm understanding in areas of mathematics and science, as well as a broad education in liberal studies to provide a basis for understanding the societal implications of the work being performed.

Equal Opportunity

The degree programs of the college and the professions they represent actively seek out women and under-represented minorities. Opportunities are unlimited, and an increasing number are entering the professions.

Preparation and Admission

A statement of undergraduate and graduate admission requirements is included in the admissions portion of this catalog. A student may be admitted with less than the requirements listed, but the deficiency must be made up before he or she can progress very far in a college engineering course of study.

Students who contemplate entering the College of Engineering with advanced standing from other institutions should complete as many of the freshman and sophomore requirements listed in the curricula as possible. Calculus, chemistry and physics and the various introductory engineering courses are prerequisites to many advanced courses, and their omission may delay graduation.

Students from out-of-state institutions who wish to transfer to a degree program offered by the College of Engineering are invited to apply. Those whose cumulative GPA is below 2.8 for all previous college-level courses,

including any courses taken at UI, may be admitted on approval of the College of Engineering Admissions Committee.

Admission to Classes

As a prerequisite to any upper-division course normally taken in the junior or senior year and offered by the College of Engineering, students in the College of Engineering must have completed selected courses from the required courses in chemistry, computer science, engineering, mathematics, and physics that are normally to be taken by them during their first two years, and must have attained a grade of C or better in each of those courses.

Scholarships and Awards

Many scholarships and awards are available to College of Engineering students and prospective students. See Student Financial Aid Services (<https://www.uidaho.edu/financial-aid/>) for more information.

Faculty

The faculty is the key to the quality of the engineering program. All faculty members in this college hold advanced engineering degrees and all but four hold the Ph.D. degree. Recognition in such publications as *Who's Who in America*, *Who's Who in the West*, *Who's Who in Engineering*, and *American Men and Women of Science* is common.

A distinguishing feature of the faculty is a blend of academic and practical experience. Many faculty members have extensive experience in practice that they bring into the classroom, preserving a balance between theoretical and practical aspects of engineering.

Facilities

The facilities of the College of Engineering are among the finest in the country. Work is centered in the two-block-square engineering complex, which includes the Allen S. Janssen Engineering Classroom Building, the J. E. Buchanan Laboratory, the Gauss-Johnson Engineering Laboratory, McClure Hall, and the Engineering/Physics Building. These facilities are supplemented by biological engineering laboratories at other locations on the campus. In total, more than 250,000 square feet of floor space is used by the College of Engineering. Laboratories include modern equipment for teaching and research in all areas of instruction with recent additions for computerized drafting, CAD/CAM, computerized VLSI design, and robotics. Some of the equipment is of advanced design found in only a few institutional laboratories. Students also have access to over 20 general purpose open-access computer laboratories across the campus, with over 600 computers. There are over 100 software applications available, as well as the web, email, and other network services. An assortment of desk-top minicomputers and engineering work stations are available within the engineering complex. Wireless access is available in all of the engineering buildings.

Standing and Advantages

With a tradition of excellence dating from the founding of the University of Idaho, the College of Engineering has developed and maintained engineering degree programs on the Moscow campus that are noted for quality. For over 40 years, graduate programs in several disciplines have been available at off-campus sites as well. Since 1896, when it granted its first degrees, graduates of the college have spread throughout the world. The large number of firms and agencies throughout the country that send interviewers to the campus each year seeking to hire

Idaho engineering graduates attest to the reputation of the university's engineering program.

The size of the college is near the median of engineering colleges in the country. While it is not so large that the importance of the student as an individual is lost, it is large enough to support the faculty and facilities needed for top quality education.

Attention is given to both undergraduate and graduate programs. New concepts and knowledge resulting from the graduate program feed into the undergraduate program to keep it up to date. Undergraduate students have an opportunity to observe and/or contribute effort to graduate research projects to help them determine their interest in graduate work.

Engineering Experiment Station

The function of the Engineering Experiment Station is to encourage and coordinate the College of Engineering's research and extension programs that are integral parts of the college's academic and service efforts.

The research program in engineering is conducted by the faculty, staff, and students of the college. There is neither a separate research facility nor a separate research staff. The College of Engineering requires that any research it undertakes have academic significance. A large part of the college's research program deals with developing new knowledge that is applicable to Idaho's economy or devising new methods or applications for using existing knowledge to the benefit of the state of Idaho. Most of the funds in support of research come from sources other than legislative appropriations. These funds are the result of research contracts and grants with various local, state, and federal agencies and private industry. Information regarding research capabilities is available upon request.

Believing that education is a never-ending need of mankind, the College of Engineering, through the means of short courses, workshops, seminars and forums, and pertinent publications, attempts to ascertain and meet the specific continuing education needs of Idaho's graduate engineers, computer scientists, and the technical community. Staff members also endeavor to provide information to the entire population of Idaho that may contribute to the successful solving of societal problems.

Off-Campus Programs

To fulfill its charge to provide engineering education to the people of Idaho, the College of Engineering provides several degree programs off campus. Graduate degrees in most disciplines are available through the Resident Instructional Centers at Boise, Idaho Falls, and Coeur d'Alene, using a combination of live, web, and distance delivered courses. The Engineering Outreach program uses a variety of technologies to provide graduate and advanced undergraduate course work, including some complete master's degrees, at any location. For more information, see "Resident Instructional Centers."

General College Requirements for Graduation

University Requirements. See regulation J (p. 78) for requirements that all students in the university must meet.

College Requirements. The minimum credit requirement for university curricula is 120 credits for an undergraduate degree. Some engineering curricula require a greater number of credits.

Note: In calculating the credit total for each degree, the College of Engineering does not include credits that a student may have been required to earn in ENGL 101, MATH 143, and any courses taken to remove deficiencies.

Courses of Study and Degrees

The College of Engineering includes the degree-granting Departments of Chemical and Biological Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, Mechanical Engineering, Nuclear Engineering and Industrial Technology, and the Department of Computer Science. Careful attention is given to curriculum content and educational philosophy to keep all programs attuned to rapidly changing technology.

Programs in the college lead to the Bachelor of Science in the following disciplines: Biological Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Material Science and Engineering, Mechanical Engineering, Computer Science, Cybersecurity, and Industrial Technology.

Most of the courses taken by freshmen and sophomores are the same in all curricula. The student may postpone a final decision on a branch of study for a year or more with little, if any, consequence, thus allowing ample opportunity for professional orientation. The junior and senior years are devoted to application of basic principles and design in the various fields of practice.

Courses of study leading to the degrees of Master of Science (M.S.), Master of Engineering (M.Engr.), and Doctor of Philosophy (Ph.D.) are offered in biological, chemical, civil, electrical, geological, and mechanical engineering. The M.S. and M.Engr. degrees are available in computer engineering and environmental engineering, and the M.S. and Ph.D. degrees are available in computer science. Master of Science degrees are available in geological engineering, material science and engineering, and technology management. The Ph.D. degree is also available in Material Science and Engineering. The Master of Engineering in engineering management is also available. The M.S., M.Engr., and Ph.D. degrees in nuclear engineering are available at the Idaho Falls Center.

Major Curricula

The curriculum for each major is listed in the individual department section. Each curriculum provides for electives to be arranged in consultation with the student's advisor in accordance with the student's interest and consistent with current department and college policies. The electives are intended to provide flexibility in the student's program. Undesignated electives will usually be taken outside of the student's major field of study.

The following undergraduate programs in the College of Engineering are currently accredited by the Engineering Accreditation Commission of ABET, www.abet.org: Biological Engineering, Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Material Science and Engineering, and Mechanical Engineering. The computer science program is accredited by the Computing Accreditation Commission of ABET, www.abet.org. Minors are offered in several programs but are not accredited.

Department of Chemical and Biological Engineering

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chembioeng@uidaho.edu; www.uidaho.edu/engr/academic-departments/chbe (<http://www.uidaho.edu/engr/academic-departments/chbe/>).

The mission of the Chemical and Biological Engineering Department is to provide quality educational programs firmly based in fundamental concepts and to perform and publish outstanding research in chemical and biological engineering.

The educational objectives for graduates from the Chemical Engineering baccalaureate (B.S.) program are to:

1. Advance their careers through demonstrated skill in engineering analysis, modeling and simulations, experimental methods, application of codes and standards, process implementation, product manufacturing, and design;
2. Drive client and stakeholder satisfaction through ethical, sustainable, and safe work practices; effective project management; and optimal use of time, talents, and budgetary resources;
3. Become acknowledged as an effective communicator within their field or industry through the creation of clear problem statements, informative technical reports, and useful participation in technical conferences or through knowledge-sharing technologies; and
4. Prioritize life-long learning and advancement through entrepreneurship; activity in professional societies, organizations, and communities; innovation; pursuit of continuing education and graduate degrees; professional licenses or certifications; or other professional development activities.

The educational objectives for graduates from Biological Engineering baccalaureate (B.S.) program are to:

1. Learn and Integrate: Graduates will be proficient engineering problem solvers capable of identifying, formulating, and solving engineering problems by applying their knowledge of mathematics, chemistry, physics, engineering, and appropriate processing, biochemical, biomedical, and environmental topics.
2. Think and create: Graduates will be effective engineers who can apply their skills to design systems, components, and processes to solve engineering problems for an ever-changing world.
3. Communicate: Graduates will be effective written and verbal communicators as well as productive team members.
4. Clarify purpose and perspective: Graduates will have a strong professional identity with a keen awareness of their professional and ethical responsibility, and they will practice lifelong learning.
5. Practice Citizenship: Graduates will design for advancement and sustainability of their local, national, and global communities protecting human health and safety and practicing environmental stewardship.

Progress towards these program educational objectives is assessed by student performance on the nationally administered Fundamentals in Engineering (FE) Examination, performance at international design competitions, exit interviews with graduating students, and surveys of graduated students and their employers.

Upon graduation, students will be able to:

1. Identify, formulate, and solve complex engineering problems by applying principles of engineering, sciences, and mathematics;
2. Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
3. Communicate effectively with a range of audiences;
4. Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
5. Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
6. Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions; and
7. Acquire and apply new knowledge as needed, using appropriate learning strategies.

Chemical Engineering Program

The Bachelor of Science Program in Chemical Engineering is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, which combines the science of chemistry with the discipline of engineering in order to solve problems and to increase process efficiency. One of the most attractive aspects of a chemical engineering future is the variety of work available. The Chemical Engineering Program is a blend of physics, chemistry, and mathematics; thus, a chemical engineer possesses a versatility that gives him or her many opportunities for employment in fields such as energy systems, pulp and paper, environmental engineering, food products, nuclear power, petroleum and petrochemicals, semiconductors, synthetic fuels, radioisotope applications, plastics and polymers, pharmaceuticals, education, biomedical engineering, computer applications, alternate energy sources, steel, nanotechnology, and textiles. A chemical engineer can choose work in research and development, design and construction, operations, management, teaching, or technical sales.

The faculty of the Chemical Engineering Program is dedicated to excellence in teaching. It is the faculty's goal to provide the students with a strong, well-rounded background for immediate entry into the industrial workforce or for graduate study. This background includes the theoretical aspects of chemical engineering as well as practical work experiences. Thus, much of the equipment that is installed in Chemical Engineering laboratories is on the scale of pilot plant equipment. Because much of the equipment is made of glass, students are able to see at a glance what processes occur and where the streams are flowing. The department has a two-story distillation column, a gas absorber, a two-stage evaporator, two types of chemical reactors, a catalytic reactor, liquid extraction equipment, membrane-based gas separation, three scanning probe microscopes, three vibrational spectroscopy instruments, multiple gas chromatographs, process control labs, and supporting analytical equipment, all used by undergraduate students. Proof that the program's goals are being achieved is in the job-placement statistics for chemical engineers from U of I. Most receive job offers before graduation, and many graduates now hold high-level technical and management positions in industry, government, and academia.

Students entering the graduate program in Chemical Engineering can work towards an M.S. (thesis), M.Engr. (non-thesis), or Ph.D. degree. The department has available a number of fellowships and assistantships

for students from industry and alumni, UI graduate assistantships, and externally funded research assistantships. Entering graduate students must normally hold a B.S. in Chemical Engineering. The graduate program also includes provisions for study leading to an M.S. in Chemical Engineering for students who have a B.S. degree in a related field. Students will be required to register as undergraduates for as many semesters as needed to meet prerequisites to courses required for the M.S. (Ch.E.) degree.

Graduate studies in this program are highly diversified in order to accommodate the needs of most students who have a good basic background in the physical sciences, mathematics, and engineering. Areas of expertise include chemical reaction engineering, simulation, optimization and process design especially for energy systems, pulp and paper, food applications, hazardous waste characterization and bioremediation, membranes, nanoscience, fluid mechanics, biochemical engineering, and mass transfer. The graduate program in chemical engineering requires the GRE with scores of: Analytical >4.5, Quantitative >157, and Verbal >153, as well as a TOEFL score of at least 550 (paper-based) or 79 (computer-based).

Biological Engineering Program

The Bachelor of Science Program in Biological Engineering is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, which integrates engineering principles with biological systems to develop new technologies and solutions to address societal needs. For example, biological engineers improve environmental quality, engineer bacteria to produce value-added products, develop equipment to harvest and process food, and design/manufacture medical devices. Given the diversity of the biological engineering discipline, biological engineers find themselves working in a variety of fields including bioprocessing, bioenergy, environmental, food production, agricultural, pharmaceutical, and biomedical. This diverse expertise makes biological engineers exceptionally valuable in today's challenging world.

The Biological Engineering Program offers courses in biology, chemistry, mathematics, and physics that prepare students for more advanced courses in biotransport processes, bio-based products, bioenergy, biomedical engineering, bioprocessing, and sustainability. Much of our students' education takes place in labs: making discoveries about renewable energy in the advanced biofuel lab, designing controls and instruments in the power lab, analyzing medical images in the neurophysiology lab, and operating bioreactors in cell and tissue engineering lab.

The graduate program is offered in Biological Engineering with specialization in bio-based products, biofuels, biomaterials, bioprocessing, biotechnology, cell/tissue engineering, climate modeling, environmental impact assessment, gene/drug delivery, liquid plasma technology, nanotechnology, neural imaging, precision agriculture, wastewater treatment, and water management. The graduate degrees offered in Biological Engineering are Master of Science (thesis), Master of Engineering (non-thesis) and Ph.D. Prospective students should have the equivalent of a B.S. degree in engineering and science.

Majors

- Biological Engineering (B.S.) (p. 250)
- Chemical Engineering (B.S.Ch.E.) (p. 252)

Chemical and Biological Engineering Graduate Program

- Biological Engineering (M.Engr.) (p. 252)
- Biological Engineering (M.S.) (p. 252)
- Biological Engineering (Ph.D.) (p. 252)
- Chemical Engineering (M.Engr.) (p. 254)
- Chemical Engineering (M.S.) (p. 255)
- Chemical Engineering (Ph.D.) (p. 255)

Biological Engineering (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
BE 142	Introduction to Biological Engineering	2
BE 242	Biological Engineering Analysis and Design	3
BE 361	Biotransport Processes	3
BE 441	Instrumentation and Measurements	3
BE 461	Bioprocess Engineering	3
BE 462	Electric Power and Controls	3
BE 478	Engineering Design I	3
BE 479	Engineering Design II	3
BE 491	Senior Seminar	1
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 380	Biochemistry I	4
CHEM 111	General Chemistry I ^{1,2}	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
ENGR 210	Engineering Statics ^{1,2}	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
ECON 201	Principles of Macroeconomics	3
or ECON 202	Principles of Microeconomics	
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III ^{1,2}	3
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I ^{1,2}	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
STAT 301	Probability and Statistics	3
<i>Technical Electives</i>		21

Select 12 credits from any 300 or 400 level Biological Engineering courses

Select 9 credits from any 300 or 400 level engineering or sciences courses

Total Hours **110**

1

A grade of C or better is required in each of the following courses before registration is permitted in upper-division engineering courses: BE 242, CHEM 111, ENGR 210, MATH 275, and PHYS 211.

2

To graduate in this program, a grade of C or better is required in each of the following courses: BE 242, CHEM 111, ENGR 210, MATH 275, and PHYS 211.

Courses to total 128 credits for this degree

Four-Year Plan

	Hours	
Fall Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 101	Writing and Rhetoric I	3
ENGR 123	First Year Engineering	2
MATH 170	Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Hours	16	
Spring Term 1		
BE 142	Introduction to Biological Engineering	2
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 175	Calculus II	4
ENGL 102	Writing and Rhetoric II	3
Hours	18	
Fall Term 2		
BE 242	Biological Engineering Analysis and Design	3
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
American Diversity Course		3
Hours	18	
Spring Term 2		
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
ENGR 210	Engineering Statics	3
MATH 310	Ordinary Differential Equations	3
ECON 201	Principles of Macroeconomics	3
or ECON 202	or Principles of Microeconomics	
PHYS 212	Engineering Physics II	3
Hours	16	
Fall Term 3		
BIOL 380	Biochemistry I	4
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
STAT 301	Probability and Statistics	3
Oral Communication Course		3
Hours	16	
Spring Term 3		
BE 361	Biotransport Processes	3
BE 462	Electric Power and Controls	3

ENGR 320	Engineering Thermodynamics and Heat Transfer	3
UPDV BE course, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
UPDV Engineering course, Major Elective Course		3
Hours		18
Fall Term 4		
BE 441	Instrumentation and Measurements	3
BE 478	Engineering Design I	3
BE 491	Senior Seminar	1
UPDV BE Elective, Major Elective Course		3
UPDV BE Elective, Major Elective Course		3
UPDV Engineering course, Major Elective Course		3
Hours		16
Spring Term 4		
BE 461	Bioprocess Engineering	3
BE 479	Engineering Design II	3
Social and Behavioral Ways of Knowing Course		3
UPDV BE Elective, Major Elective Course		3
International Course		3
UPDV Engineering course, Major Elective Course		3
Hours		18
Total Hours		136

Five-Year Plan

		Hours
Fall Term 1		
ENGL 101	Writing and Rhetoric I	3
ENGR 123	First Year Engineering	2
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
International Course		3
Oral Communication Course		3
Hours		15
Spring Term 1		
BE 142	Introduction to Biological Engineering	2
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Fall Term 2		
BE 242	Biological Engineering Analysis and Design	3
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 175	Calculus II	4
Hours		16
Spring Term 2		
ENGR 210	Engineering Statics	3
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Humanistic and Artistic Ways of Knowing Course		3
Hours		13
Fall Term 3		
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
ENGR 350	Engineering Mechanics of Materials	3
STAT 301	Probability and Statistics	3

UPDV Engineering/Science, Major Elective Course		3
Hours		14
Spring Term 3		
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
ECON 201 or ECON 202	Principles of Macroeconomics or Principles of Microeconomics	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
Hours		13
Fall Term 4		
BIOL 380	Biochemistry I	4
ENGR 335	Engineering Fluid Mechanics	3
UPDV BE, Major Elective Course		6
Hours		13
Spring Term 4		
BE 461	Bioprocess Engineering	3
BE 462	Electric Power and Controls	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 360	Engineering Economy	2
BE 361	Biotransport Processes	3
Hours		14
Fall Term 5		
BE 441	Instrumentation and Measurements	3
BE 478	Engineering Design I	3
BE 491	Senior Seminar	1
UPDV Engineering/Science, Major Elective Course		3
American Diversity Course		3
Hours		13
Spring Term 5		
BE 479	Engineering Design II	3
Social and Behavioral Ways of Knowing Course		3
UPDV BE, Major Elective Course		3
UPDV BE, Major Elective Course		3
UPDV Engineering/Science, Major Elective Course		3
Hours		15
Total Hours		142

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates will be proficient engineering problem solvers capable of identifying, formulating, and solving engineering problems by integrating their knowledge of mathematics, engineering, physics, biology, and chemistry.
2. Graduates will be effective engineers who can apply their skills to design systems, components, and processes to solve engineering problems for an ever-changing world.
3. Graduates will be effective written and verbal communicators and productive team members.
4. Graduates will have a strong professional identity with a keen awareness of their professional and ethical responsibility and they will practice lifelong learning.
5. Graduates will design for advancement and sustainability of their local, national, and global communities, protecting human health and safety and practicing environmental stewardship.

Biological Engineering (M.Engr.) Master of Engineering. Major in Biological Engineering.

General M.Engr. requirements apply.

Please see the Biological Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will demonstrate knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
2. The student will conduct original research or design to appropriately and accurately analyze experimental data with insightful discussion.
3. The student will communicate findings in an appropriate format for disciplinary, interdisciplinary, and lay audiences, both orally and in writing.
4. The student will understand the impact of a project or research specifically, and of the responsibility to enhance the quality of life of the global community through the practice of engineering.

Biological Engineering (M.S.) Master of Science. Major in Biological Engineering.

General M.S. requirements apply.

Please see the Biological Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will demonstrate knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
2. The student will conduct original research or design to appropriately and accurately analyze experimental data with insightful discussion.
3. The student will communicate findings in an appropriate format for disciplinary, interdisciplinary, and lay audiences, both orally and in writing.
4. The student will understand the impact of a project or research specifically, and of the responsibility to enhance the quality of life of the global community through the practice of engineering.

Biological Engineering (Ph.D.) Doctor of Philosophy. Major in Biological Engineering.

Admission to this program is based on the student's interest being compatible with faculty interest, funds, and facilities. Admission is given only after a thorough review of the student's academic background, research interests, and potential. Individual programs normally consist of three years' work beyond the bachelor's degree. The department does not have a mandatory foreign language requirement. Students are required, however, to broaden their education in an area outside the normal engineering and science curricula. This can be done by taking courses in the humanities and social sciences, demonstrating an in-depth proficiency in a foreign language, or participating in an equivalent broadening educational experience.

Please see the Biological Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will demonstrate an in-depth knowledge of degree subject matter and expert engineering and scientific knowledge of research area.
2. The student will conduct original research and appropriately and accurately analyze experimental results.
3. The student will communicate research findings in an appropriate format for disciplinary, interdisciplinary, and lay audiences, both orally and in writing.
4. The student will demonstrate understanding of the impact of thesis research and of the responsibility to enhance the quality of life of the global community through the practice of engineering.

Chemical Engineering (B.S.Ch.E.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
CHE 110	Introduction to Chemical Engineering	1
CHE 123	Computations in Chemical Engineering	2
CHE 220	Programming for Chemical Engineers	3
CHE 223	Material and Energy Balances	3
CHE 326	Chemical Engineering Thermodynamics	3
CHE 330	Separation Processes I	3
CHE 340	Transport and Rate Processes I	4
CHE 341	Transport and Rate Processes II	4
CHE 423	Reactor Kinetics and Design	3
CHE 433	Chemical Engineering Lab I	1
CHE 434	Chemical Engineering Lab II	1
CHE 444	Process Analysis and Control	3
CHE 453	Process Analysis & Design I	3
CHE 454	Process Analysis and Design II	3
CHE 491	Senior Seminar	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
ENGR 210	Engineering Statics	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1

PHYS 212	Engineering Physics II	3
Select one Chemical Engineering Technical Elective course numbered 390 or greater		3
Select one Chemical (CHE), Biological (BE) or Material Science Engineering (MSE) Technical Elective course numbered 390 or greater		3
Select one Economics Elective		3
Select three Humanities and Social Science Elective courses:		9
Select one Communications Elective course		2
Select one Mathematics Elective numbered 300 or greater ¹		3
Select 6 credits of Technical Electives in Math, Science, or Engineering numbered 300 or greater ²		6

Total Hours **118**

1

Must be numbered 300 or greater, excluding any 398, 498, or 598 Internship.

2

Technical Electives in Math, Science, or Engineering: must be numbered 300 or greater.

To be enrolled in upper-division CHE courses, a student majoring in chemical engineering must earn a grade of 'C' or better in each of the following courses:

Code	Title	Hours
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHE 223	Material and Energy Balances	3
ENGR 210	Engineering Statics	3
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3

Students transferring CHE 223 or its equivalent from a university without an ABET accredited chemical engineering program must pass a test on the subject matter of this course before enrolling in upper-division CHE courses.

In addition, a passing grade is required in each of the following courses before enrolling in upper-division CHE courses:

Code	Title	Hours
CHE 123	Computations in Chemical Engineering	2
CHE 220	Programming for Chemical Engineers	3
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3

A student majoring in chemical engineering may not register for upper-division CHE courses after accumulating more than four grades of 'D' or 'F' in UI mathematics, science, or engineering courses. Included in this number are multiple repeats in a single class or single repeats in

multiple classes. A warning will be issued in writing to students who have accumulated two grades of 'D' or 'F' used to satisfy curricular requirements.

A GPA in CHE designated courses of at least 2.0 is required to graduate

Courses to total 124 credits for this degree, not counting ENGL 101, any 398 (Internship), any 498 (Internship), any 598 (Internship), or mathematics courses numbered lower than MATH 170, and other courses that might be required to remove deficiencies.

Four-Year Plan

Fall Term 1	Hours	
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
ENGR 123	First Year Engineering	2
MATH 170	Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Hours	16	
Spring Term 1		
CHE 110	Introduction to Chemical Engineering	1
CHE 123	Computations in Chemical Engineering	2
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours	16	
Fall Term 2		
CHE 220	Programming for Chemical Engineers	3
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
ENGR 210	Engineering Statics	3
MATH 275	Calculus III	3
PHYS 212	Engineering Physics II	3
Hours	16	
Spring Term 2		
CHE 223	Material and Energy Balances	3
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
ENGR 335	Engineering Fluid Mechanics	3
MATH 310	Ordinary Differential Equations	3
Hours	16	
Fall Term 3		
CHE 326	Chemical Engineering Thermodynamics	3
CHE 340	Transport and Rate Processes I	4
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
ECON 201 or ECON 202		3
Hours	14	
Spring Term 3		
CHE 330	Separation Processes I	3
CHE 341	Transport and Rate Processes II	4
CHE 423	Reactor Kinetics and Design	3
UPDV Mathematics Elective Course		3
Oral Communication Course		3
American Diversity Course		3
Hours	19	
Fall Term 4		
CHE 433	Chemical Engineering Lab I	1

CHE 444	Process Analysis and Control	3
CHE 453	Process Analysis & Design I	3
CHE 491	Senior Seminar	1
UPDV Technical Math, Sci, or Engr Elective Course		3
390 or higher CHE or BE, Elective Course		3
Social & Behavioral Ways of Knowing Elective		3
Hours		17
Spring Term 4		
CHE 434	Chemical Engineering Lab II	1
CHE 454	Process Analysis and Design II	3
390 or higher CHE Tech Elective Course		3
UPDV Math, Sci, or Engr Tech Elective Course		3
Humanistic Ways of Knowing Course		3
International Course		3
Hours		16
Total Hours		130

Five-Year Plan

	Hours	
Fall Term 1		
ENGL 101	Writing and Rhetoric I	3
ENGR 123	First Year Engineering	2
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3
Hours		15
Spring Term 1		
CHE 110	Introduction to Chemical Engineering	1
CHE 123	Computations in Chemical Engineering	2
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
ECON 201 OR ECON 202		3
International Course		3
Hours		16
Fall Term 2		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGR 210	Engineering Statics	3
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		13
Spring Term 2		
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		13
Fall Term 3		
CHE 220	Programming for Chemical Engineers	3
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
ENGR 320	Engineering Thermodynamics and Heat Transfer	3
MATH 275	Calculus III	3
PHYS 212	Engineering Physics II	3
Hours		16
Spring Term 3		
CHE 223	Material and Energy Balances	3
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
ENGR 335	Engineering Fluid Mechanics	3

MATH 310	Ordinary Differential Equations	3
Hours		13
Fall Term 4		
CHE 326	Chemical Engineering Thermodynamics	3
CHE 340	Transport and Rate Processes I	4
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
Hours		11
Spring Term 4		
CHE 330	Separation Processes I	3
CHE 341	Transport and Rate Processes II	4
CHE 423	Reactor Kinetics and Design	3
UPDV Mathematics Elective Course		3
Hours		13
Fall Term 5		
CHE 433	Chemical Engineering Lab I	1
CHE 444	Process Analysis and Control	3
CHE 453	Process Analysis & Design I	3
CHE 491	Senior Seminar	1
390 or higher CHE or BE, Major Elective Course		3
UPDV Math, Sci, or ENGR Technical Elective Course		3
Hours		14
Spring Term 5		
CHE 434	Chemical Engineering Lab II	1
CHE 454	Process Analysis and Design II	3
390 or higher CHE Elective Course		3
UPDV Math, Sci, or ENGR Technical Elective Course		3
American Diversity Course		3
Hours		13
Total Hours		137

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. The student will apply aspects of engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
2. The student will identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
3. The student will develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
4. The student will communicate effectively with a range of audiences.

Chemical Engineering (M.Engr.) Master of Engineering. Chemical Engineering major.

General M.Engr. requirements apply. All students entering the chemical engineering program must complete:

Code	Title	Hours
CHE 515	Transport Phenomena	3
CHE 529	Chemical Engineering Kinetics	3
CHE 541	Chemical Engineering Analysis I	3
Total Hours		9

Please see the Chemical Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will carry an engineering project from concept through design, development, formulation, and/or production phase(s) using results of applied research and other information (historical, commercial, theoretical, etc.).
2. The student will communicate professional work in an appropriate format (i.e., results of research in oral and written formats).
3. The student will demonstrate mastery in chemical engineering and related sciences relevant to study in a focus area, integrating and building upon the foundation provided by a related undergraduate degree.

Chemical Engineering (M.S.) Master of Science. Major in Chemical Engineering.

Thesis only. General M.S. requirements apply. All students entering the Chemical Engineering program must complete:

Code	Title	Hours
CHE 515	Transport Phenomena	3
CHE 529	Chemical Engineering Kinetics	3
CHE 541	Chemical Engineering Analysis I	3
Total Hours		9

Please see the Chemical Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will carry an engineering project from concept through design, development, formulation, and/or production phase(s) using results of applied research and other information (historical, commercial, theoretical, etc.).
2. The student will communicate professional work in an appropriate format (i.e., results of research in oral and written formats).
3. The student will demonstrate mastery in chemical engineering and related sciences relevant to study in a focus area, integrating and building upon the foundation provided by a related undergraduate degree.

Chemical Engineering (Ph.D.) Doctor of Philosophy. Major in Chemical Engineering.

While most students entering the graduate program possessing only the bachelor's degree will first earn the M.S., it is possible to bypass the M.S. and work directly toward the Ph.D. Students electing this option will be expected to critically analyze a current research area as part of their degree requirements. This will constitute their Ph.D. qualifying examination. For others, the oral M.S. thesis examination serves as the Ph.D. qualifying examination. A written research proposal modeled after

those submitted to such agencies as the National Science Foundation is required as part of the requirements for the Ph.D.

Please see the Chemical Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will effectively communicate research results in oral and written form.
2. The student will demonstrate expert engineering and science knowledge in a specialty field or subdiscipline.
3. The student will show capability to advance the frontier of knowledge in designated research area.
4. The student will communicate professional work in an appropriate format (i.e., results of research in oral and written formats).

Department of Civil and Environmental Engineering

Fritz Fiedler, P.E., Ph.D., Department Chair and Professor (104 Buchanan Engineering Laboratory; (208) 885-2980, cee@uidaho.edu; https://www.uidaho.edu/engr/departments/cee (https://www.uidaho.edu/engr/departments/cee/))

Environmental sensitivity and sustainable development are emerging as the tenets for continued survival on our planet. Civil engineers design innovative solutions to ensure wise stewardship of our limited natural resources and in designing the infrastructure needed for modern society to function. Students who enter the civil engineering profession can anticipate a very challenging and rewarding career.

Civil engineers apply scientific principles to the design of society's infrastructure. The pyramids of Egypt, the irrigation systems that supported agriculture in ancient Babylonia and Assyria, the roads that linked the Roman Empire, and the railroads, bridges and barge canals of the early United States were all civil engineering projects that served the people of their times. Today's civil engineers are involved in the design and construction of highways, bridges, buildings, water conveyance systems, water reuse facilities, wastewater treatment plants, and airports. Civil engineers may also be involved in planning for traffic control, flood plain management, remediation of contaminated groundwater, and water and air quality management. Graduates of civil engineering programs work in engineering consulting firms, in government agencies at the local/state/federal level, for non-governmental organizations (NGOs), and with construction contractors.

Lower-division courses in civil engineering consist of basic courses in science, mathematics, and engineering required of most students within the College of Engineering. Coursework in the junior year provides students with a broad background in all of the civil engineering subdisciplines, while technical electives in the senior year allow for specialization. For civil engineering students interested in geology, there is an option to complete a minor in Geological and Mining Engineering.

The Department offers five graduate degree programs; the non-thesis degrees may be completed on a part-time basis and entirely online:

1. Master of Science in Civil Engineering (30 credits, with thesis),
2. Master of Engineering (M.Engr.) in Civil Engineering (30 credits, non-thesis),
3. Master of Science in Geological Engineering (30 credits, with thesis),

4. Master of Science in Geological Engineering (30 credits, non-thesis), and
5. Doctor of Philosophy in Civil Engineering.

Coursework in each of the graduate degree programs is relatively flexible depending on student interest and course availability. Financial assistance is available on a competitive basis in the form of teaching and research assistantships, but to thesis and dissertation students only. Applicants to the Ph.D. program are admitted only if financial support is available, normally in the form of research assistantships that are awarded at the discretion of individual faculty members. Before submitting an application, students interested in this program should contact a faculty member with similar interests to determine if funding is available.

Applicants to graduate study in civil engineering should hold degrees in civil engineering or in another engineering discipline. Exceptions are made only if specific deficiency courses are taken before admission. Completing deficiency courses does not guarantee admission to a graduate program; if admitted, credit for such courses is not counted toward the total number of credits required for a degree. Additional preparatory coursework may also be required as determined by the student's Graduate Committee or as needed to enroll in courses in the student's Study Plan. Students with a background in mathematics, physics, geology, or hydrology are welcome to apply to the graduate programs in geological engineering, but must complete any deficiency courses before admission; in addition, two years of professional work experience is expected. We do not currently require the GRE.

The mission of the Department of Civil and Environmental Engineering is to provide a high quality education at both the undergraduate and graduate levels. In the 4-6 years after completing the University of Idaho's Bachelor's Degree in Civil Engineering, we expect our graduates to:

1. Attain career advancement based on a demonstrated ability to apply and expand fundamental engineering principles to the analysis and design of engineering projects, incorporate professional codes and standards, and be aware of social, economic and environmental impacts;
2. Be effective and competent communicators regarding civil engineering systems and processes;
3. Establish a path for life-long learning and continuous professional development through graduate education, short-courses, service on professional committees, and attendance at conferences;
4. Meet or exceed the State Board qualification requirements to obtain Professional Engineering licensure and accept higher levels of responsibility in managing personnel and projects requiring collaboration with interdisciplinary groups, elected officials, and the public; and
5. Be accountable for the health, safety, and welfare of the general public, while maintaining the highest ethical and professional practices.

The Bachelor of Science (B.S.) degree program in civil engineering at the University of Idaho is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>. (<http://www.abet.org>)

Majors

- Civil Engineering (B.S.C.E.) (p. 256)

Minors

- Geological and Mining Engineering Minor (p. 260)

Civil and Environmental Engineering Graduate Program

Graduate study is offered with specialization in the following subdisciplines of civil engineering: hydraulics and hydrologic engineering, ecohydrology (in Boise only), environmental engineering, structural engineering, geotechnical engineering, highway and pavement materials, and transportation engineering.

- Civil Engineering (M.Engr.) (p. 258)
- Civil Engineering (M.S.) (p. 259)
- Civil Engineering (Ph.D.) (p. 259)
- Geological Engineering (M.S.) (p. 259)

Civil Engineering (B.S.C.E.)

To graduate in this program, a grade of 'C' or better is required in all math, science, and engineering courses used to fulfill degree requirements. Students may accumulate no more than 14 credit hours of 'D' or 'F' in math, science, or engineering courses. Included in this number are multiple repeats of a single class or single repeats of multiple classes, as well as courses transferred from other institutions. Students who exceed 14 credits of 'D' or 'F' will be permanently disqualified from pursuing the B.S. degree in Civil Engineering at the University of Idaho. To complete this degree, all students must show proof of registering for the Fundamentals of Engineering (FE) Exam.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
CE 105	Civil Engineering Drafting	3
CE 211	Engineering Surveying	3
CE 215	Civil Engineering Analysis and Design	3
CE 322	Hydraulics	4
CE 325	Fundamentals of Hydrologic Engineering	3
CE 330	Fundamentals of Environmental Engineering	3
CE 342	Theory of Structures	3
CE 357	Properties of Construction Materials	4
CE 360	Fundamentals of Geotechnical Engineering	4
CE 372	Fundamentals of Transportation Engineering	3
CE 493	Senior Design I	2
CE 494	Senior Design II	3
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
COMM 101	Fundamentals of Oral Communication	3
ENGR 123	First Year Engineering	2
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
ENGR 360	Engineering Economy	2
GEOL 111	Physical Geology for Science Majors	3
GEOL 111L	Physical Geology for Science Majors Lab	1

or GEOL 101L	Physical Geology Lab	
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHIL 103	Introduction to Ethics	3
or PHIL 208	Business Ethics	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	4
STAT 301	Probability and Statistics	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one of the following:		3-4
BIOL 114	Organisms and Environments	
BIOL 115	Cells and the Evolution of Life	
CHEM 112	General Chemistry II	
EPPN 154	Microbiology and the World Around Us	
PHYS 212	Engineering Physics II	
PHYS 213	Engineering Physics III	
MATH 330	Linear Algebra	
STAT 431	Statistical Analysis	

Civil Engineering Electives

A total of 18 credits are required from:	18
CE-prefix 400-level courses ¹	
GEOE-prefix 400-level courses ²	

Total Hours 113-115

¹ Except CE 400, CE 403, CE 411, CE 493, CE 498, and CE 499.
² Except GEOE 403 and GEOE 499.

Courses to total at least 121 credits for this degree, not counting Math below 170 and English below 102.

Four-Year Plan

Fall Term 1	Hours
COMM 101 Fundamentals of Oral Communication	3
ENGL 101 Writing and Rhetoric I	3
ENGR 123 First Year Engineering	2
MATH 170 Calculus I	4
PHYS 211 Engineering Physics I	3
PHYS 211L Laboratory Physics I	1
American Diversity Course	3
Hours	19
Spring Term 1	
CE 105 Civil Engineering Drafting	3
ENGL 102 Writing and Rhetoric II	3
ENGR 210 Engineering Statics	3
GEOL 111 Physical Geology for Science Majors	3
GEOL 111L Physical Geology for Science Majors Lab	1
MATH 175 Calculus II	4
Hours	17

Fall Term 2	Hours
CE 211 Engineering Surveying	3
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
ENGR 220 Engineering Dynamics	3
MATH 275 Calculus III	3
Humanistic and Artistic Ways of Knowing Course	3
Hours	16

Spring Term 2	Hours
CE 215 Civil Engineering Analysis and Design	3
ENGR 335 Engineering Fluid Mechanics	3
ENGR 350 Engineering Mechanics of Materials	3
MATH 310 Ordinary Differential Equations	3
STAT 301 Probability and Statistics	3
Hours	15

Fall Term 3	Hours
CE 322 Hydraulics	4
CE 330 Fundamentals of Environmental Engineering	3
CE 342 Theory of Structures	3
CE 357 Properties of Construction Materials	4
ENGL 317 Technical Writing II	3
Hours	17

Spring Term 3	Hours
CE 325 Fundamentals of Hydrologic Engineering	3
CE 360 Fundamentals of Geotechnical Engineering	4
CE 372 Fundamentals of Transportation Engineering	3
400 level CE or GEOE Technical, Major Elective Course	3
ECON 201 OR ECON 202 OR ECON 272	3
Hours	16

Fall Term 4	Hours
ENGR 360 Engineering Economy	2
400 level CE or GEOE Technical, Major Elective Course	3
CE 493 Senior Design I	2
400 level CE or GEOE Technical, Major Elective Course	3
International Course	3
BIOL 114 OR BIOL 115 OR CHEM 112 OR MATH 330 OR PHYS 212 OR PHYS 213 OR STAT 431	3
PHIL 103 OR PHIL 208	3
Hours	19

Spring Term 4	Hours
CE 494 Senior Design II	3
Social and Behavioral Ways of Knowing Course	3
400 level CE or GEOE Technical, Major Elective Course	3
400 level CE or GEOE Technical, Major Elective Course	3
400 level CE or GEOE Technical, Major Elective Course	3
Hours	15
Total Hours	134

Five-Year Plan

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
ENGR 123 First Year Engineering	2
GEOL 111 Physical Geology for Science Majors	3
GEOL 111L Physical Geology for Science Majors Lab	1
MATH 143 College Algebra	3
MATH 144 Analytic Trigonometry	1
Humanistic and Artistic Ways of Knowing Course	3
Hours	16
Spring Term 1	
COMM 101 Fundamentals of Oral Communication	3
CE 105 Civil Engineering Drafting	3

ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
Hours		13
Fall Term 2		
CE 211	Engineering Surveying	3
ENGR 210	Engineering Statics	3
MATH 175	Calculus II	4
American Diversity Course		3
Hours		13
Spring Term 2		
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
International Course		3
ECON 201 OR ECON 202 OR ECON 272		3
Hours		13
Fall Term 3		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGR 220	Engineering Dynamics	3
Social and Behavioral Ways of Knowing Course		3
PHIL 103 OR PHIL 208		3
Hours		13
Spring Term 3		
CE 215	Civil Engineering Analysis and Design	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
MATH 310	Ordinary Differential Equations	3
STAT 301	Probability and Statistics	3
Hours		15
Fall Term 4		
CE 322	Hydraulics	4
CE 330	Fundamentals of Environmental Engineering	3
CE 342	Theory of Structures	3
CE 357	Properties of Construction Materials	4
Hours		14
Spring Term 4		
CE 325	Fundamentals of Hydrologic Engineering	3
CE 360	Fundamentals of Geotechnical Engineering	4
CE 372	Fundamentals of Transportation Engineering	3
400 level CE or GEOE Technical, Major Elective Course		3
Hours		13
Fall Term 5		
CE 493	Senior Design I	2
ENGR 360	Engineering Economy	2
400 level CE or GEOE Technical, Major Elective Course		3
400 level CE or GEOE Technical, Major Elective Course		3
BIOL 114 OR BIOL 115 OR BIOL 154 OR CHEM 112 OR MATH 330 OR PHYS 212 OR PHYS 213 OR STAT 431		4
Hours		14
Spring Term 5		
CE 494	Senior Design II	3
400 level CE or GEOE Technical, Major Elective Course		3
400 level CE or GEOE Technical, Major Elective Course		3
400 level CE or GEOE Technical, Major Elective Course		3
Hours		12
Total Hours		136

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of

completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. By graduation, students will be able to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. By graduation, students will demonstrate an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. By graduation, students will be able to communicate effectively with a range of audiences.
4. By graduation, students will be able to recognize ethical and professional responsibilities in engineering situations and make informed judgments.
5. By graduation, students will be able to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. By graduation, students will be able to develop and conduct appropriate testing or experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. By graduation, students will have the ability to acquire and apply new knowledge as needed, without formal instruction or detailed guidance.

Civil Engineering (M.Engr.) Master of Engineering. Major in Civil Engineering.

A thesis is not required for the Master of Engineering degree.

Course requirements in the M.Eng. degree program are relatively flexible, depending on student interest and course availability. This degree may be completed on a part-time basis and entirely online. Students in this degree program are not eligible to receive graduate assistantships.

Graduate study is offered with specialization in structures, highway and pavement materials, soil mechanics, transportation, hydraulics and water resources, geological engineering, and environmental engineering.

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have a B.S. degree in Civil Engineering; however, those with B.S. degrees in other areas (e.g., other areas of Engineering, Mathematics, Physics) are also eligible for admission.

Graduate degree applicants not holding B.S. degrees in Civil Engineering are required to show evidence of completing the following undergraduate coursework: mathematics through differential equations, and one semester each of chemistry, calculus-based physics, and engineering statics. Once admitted, additional preparatory coursework will be determined by the student's advisory committee and/or as prerequisites to courses listed in the student's study plan.

Candidates for graduate study must fulfill the requirements of the College of Graduate Studies and of the Department of Civil and Environmental Engineering. A minimum of 30 credits is required for the Master of Engineering degree. A thesis is not required, but M.Engr. degree candidates are required to demonstrate to their academic advisor and

committee the ability to write a technical paper or report and to complete a comprehensive exam. Further information about the technical writing requirement and the comprehensive exam are provided in the Civil and Environmental Engineering Graduate Student Handbook.

Please see the Civil Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will be able to conduct research and analyze and interpret results.
2. The student will be able to communicate professional work.
3. The student will be able to demonstrate knowledge of degree subject matter; integrate and build on foundation provided by relevant undergraduate degree.
4. The student will understand the responsibility to enhance the quality of life of the global community through the practice of civil engineering.

Civil Engineering (M.S.) Master of Science. Major in Civil Engineering.

An approved thesis is required for the Master of Science degree.

Course requirements in this degree program are relatively flexible, depending on student interest and course availability. Financial assistance is available on a competitive basis in the form of instructional or graduate research assistantships. Areas of specialty include the following:

- Environmental Engineering
- Geotechnical Engineering
- Hydraulics and Water Resources Engineering
- Ecohydraulics (in Boise only)
- Structural Engineering
- Transportation Engineering
- Highway and Pavement Materials

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have a B.S. degree in civil engineering; however, those with B.S. degrees in other areas (e.g., other areas of engineering, mathematics, physics) are also eligible for admission.

Graduate degree applicants not holding B.S. degrees in civil engineering are required to show evidence of completing the following undergraduate coursework: mathematics through differential equations, and one semester each of chemistry, calculus-based physics and engineering statics. Once admitted, additional preparatory coursework will be determined by the student's advisory committee and/or as prerequisites to courses listed in the student's study plan. An approved thesis is required for the Master of Science degree.

Please see the Civil Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will be able to conduct research and analyze and interpret results.
2. The student will be able to communicate professional work.
3. The student will be able to demonstrate knowledge of degree subject matter; integrate and build on foundation provided by relevant undergraduate degree.

4. The student will understand the responsibility to enhance the quality of life of the global community through the practice of civil engineering.

Civil Engineering (Ph.D) Doctor of Philosophy. Major in Civil Engineering.

Persons interested in pursuing a doctoral degree should contact faculty members with whom they wish to work before admission to the College of Graduate Studies. We accept only those students for the Ph.D. degree to whom we can offer financial support. Programs are offered with specialization in the following general areas:

- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation and Materials Engineering
- Water Resources, Hydrology and Hydraulics
- Ecohydraulics (in Boise)

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have B.S. and/or M.S. degrees in civil engineering or a closely related field.

The qualifying examination is written and/or oral, and the preliminary examination is written and oral. Candidates must fulfill both the requirements of the College of Graduate Studies and of the Department of Civil & Environmental Engineering. See the College of Graduate Studies (p. 293) section of the U of I Catalog for the general requirements applicable to each degree.

Coursework requirements are relatively flexible, depending on student interest, previous training, and course availability. Financial assistance is available on a competitive basis in the form of graduate research assistantships. Students interested in graduate studies should select a specialty area in which they wish to study. Entrance requirements for the College of Graduate Studies apply. Foreign students must have a TOEFL score of at least 550 for admission to any departmental graduate degree program. We do not require the GRE. Conditional admission for Ph.D. applicants is not recommended.

For more information about civil and environmental engineering graduate studies, send requests to cee@uidaho.edu.

Please see the Civil Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The student will be able to conduct original research and analyze and interpret results.
2. The student will be able to communicate professional work.
3. The student will demonstrate knowledge of degree subject matter and engineering and scientific knowledge of research area.

Geological Engineering (M.S.) Master of Science. Major in Geological Engineering.

Geological Engineering is the professional discipline that relies on the use of geologic conditions and implications for:

1. the design and construction of civil and mining projects,
2. the evaluation and mitigation of natural and human-caused geologic hazards, and
3. the exploration and development of mineral and energy resources.

All admission requirements for the College of Graduate Studies apply. Applicants for admission generally will have a B.S. degree in civil engineering or geology; however, those with B.S. degrees in other areas (e.g., other areas of engineering, mathematics, physics) are also eligible for admission.

Graduate students enrolled in this program take a combination of courses in such areas as geological engineering, civil engineering (soil mechanics), hydrogeology, and site characterization. The degree requires a minimum of 30 semester credits beyond the baccalaureate degree. Of those 30 credits, at least 18 must be from 500-level graduate courses. The degree program is available with a thesis option and a non-thesis option. The thesis option requires 6 credits of thesis work approved by faculty who serve on the student's graduate committee. The non-thesis option is available to students who have at least two years of professional experience; this program requires a 3-credit directed study research paper and a final oral examination.

The following courses are considered to be the minimum preparation necessary for admission to the Geological Engineering Master of Science degree program. Students who do not have an adequate background in these subject areas will be required to satisfactorily complete those in which they are deficient. The actual course content of the program will depend on the student's background and career objectives. Each program is tailored to the individual student.

Required Deficiency Courses:

- Engr 210 Engineering Statics
- Engr 220 Engineering Dynamics
- Engr 335 Engineering Fluid Mechanics
- Engr 350 Engineering Mechanics of Materials
- Geol 345 Structural Geology
- Mathematics through Differential Equations

For additional information regarding the graduate program in Geological Engineering, contact the GeoE Program Director.

Please see the Geological Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. Demonstrates knowledge of degree subject matter; integrates and builds upon the foundation provided by a relevant undergraduate degree.
2. Conducts research and analyzes and interprets the results.
3. Communicates professional work.
4. Understands the responsibility to enhance the quality of life of the global community through the practice of engineering.

Geological and Mining Engineering Minor

Code	Title	Hours
CE 325	Fundamentals of Hydrologic Engineering	3
ENGR 220	Engineering Dynamics	3
GEOE 407	Rock Mechanics	3
GEOE 465	Excavation and Materials Handling	3

Choose 3 elective courses from the following:

7-12

CE 360	Fundamentals of Geotechnical Engineering
CE 330	Fundamentals of Environmental Engineering
CE 421	Engineering Hydrology
CE 460	Geotechnical Engineering Design
GEOE 428	Geostatistics
GEOL 111	Physical Geology for Science Majors
GEOL 111L	Physical Geology for Science Majors Lab
GEOL 309	Ground Water Hydrology
GEOL 335	Geomorphology
GEOL 344	Earthquakes
GEOL 345	Structural Geology
GEOL 361	Geology and the Environment
GEOL 410	Groundwater Field Methods
GEOL 422	Principles of Geophysics
HYDR 409	Quantitative Hydrogeology
HYDR 412	Environmental Hydrogeology

Total Hours

19-24

Courses to total 21 credits for this minor

Department of Computer Science

Terry Soule, Dept. Chair (237 Janssen Engr. Bldg. 83844-1010; phone 208-885-6509; chair@cs.uidaho.edu; www.cs.uidaho.edu (http://www.cs.uidaho.edu/)).

Computer science is the systematic study of algorithmic processes that describe and transform information through their theory, analysis, design, efficiency, implementation, and application. It is a broad discipline with an ever-growing array of opportunities. Graduates in this field can find employment in a wide spectrum of public and private enterprises.

The field of computer science encompasses many areas of specialization. One may find a personal niche in software development, systems development and hardware selection, studies of compatibility between hardware and software, programming language development and modification, information assurance, bioinformatics, or a combination of these and any number of other diverse computer-oriented applications and concepts. Because of this diversity in potential application areas, the computer scientist must be familiar with the language of the physical or biological sciences, mathematics, and English. If the computer is to extend its role as a benefit to mankind, the computer scientist must be broadly educated and conversant with the many implications of the powerful tool that he or she is controlling and developing.

The Department of Computer Science was formed in 1981 and is in the College of Engineering (p. 246). The Bachelor of Science in Computer Science has been offered at UI since 1977. This program consists of a carefully designed computer science core, surrounded by an extensive array of challenging technical elective courses. The core consists of courses in algorithms and data structures, programming languages, computer architecture, operating systems, software engineering, theory of computation, and a senior capstone design experience. All of these courses have important components of theory, abstraction, and design.

The Bachelor of Science program in computer science is accredited by the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET) at 111 Market Place, Suite

1050, Baltimore, MD 21202-4012, who can be reached at 410-347-7700. The department has made substantial contributions to achieving the University's designation by the US Department of Homeland Security as a National Center of Excellence in Information Assurance Education.

The department offers graduate programs leading to the degrees of Master of Science and Doctor of Philosophy. These programs combine a core of advanced work with a complement of elective courses selected to provide a focused plan of study.

Students in computer science have the unique opportunity to draw from the expertise of an outstanding faculty with extensive experience in industry, teaching, and research. Computers currently available to students include an extensive department network of UNIX, Linux, and Windows-based workstations and several campus personal computer laboratories for research focus. All major campus and department computer systems are networked together with Internet connections, providing a state-of-the-art computing environment. The department was instrumental in establishing the Center for Secure and Dependable Systems (CSDS) and the Initiative for Bioinformatics and Evolutionary Studies (IBEST). The importance of these labs can be seen from the range of private and government funding which supports the department's research in computer security, computer reliability, bioinformatics, evolutionary computation and high performance computing.

Majors

- Computer Science (B.S.C.S.) (p. 261)
- Cybersecurity (B.S.) (p. 265)

Minors

- Computer Science Minor (p. 265)
- Cybersecurity Minor (p. 266)

Certificates

- Cybersecurity Undergraduate Academic Certificate (p. 266)
- Robotics Systems Undergraduate Academic Certificate (p. 267)

Computer Science Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Computer Science. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Computer Science (M.S.) (p. 263)
- Computer Science (Ph.D.) (p. 264)
- Cybersecurity (M.S.) (p. 266)
- Secure and Dependable Computer Systems Graduate Academic Certificate (p. 268)

Computer Science (B.S.C.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
Communications (two courses required)		
COMM 101	Fundamentals of Oral Communication	3
ENGL 317	Technical Writing II	3

Computer Science First Year (three courses required)		
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
Computer Science and Cybersecurity Second Year (four courses required)		
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
CYB 220	Secure Coding and Analysis	3
Computer Science Third Year (four courses required)		
CS 360	Database Systems	4
CS 383	Software Engineering	4
CS 385	Theory of Computation	3
CS 395	Analysis of Algorithms	3
Computer Science Fourth Year (four courses required)		
CS 445	Compiler Design	4
CS 480	CS Senior Capstone Design I	3
CS 481	CS Senior Capstone Design II	3
Upper-division Technical Elective Courses (four courses required, usually completed during third and fourth year)		12
Complete any CS-300-level or CS-400-level or CYB-300-level or CYB-400-level course EXCEPT CS 398, CS 400, CS 401, CS 431, CS 499, CYB 400, CYB 401, CYB 480, CYB 481, CYB 498, CYB 499 for a total of 12 credits.		
Mathematics (four courses required, usually completed during first and second year)		
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 330	Linear Algebra	3
Statistics (one course required, usually completed during second or third year). Complete one of the following:		3
STAT 251	Statistical Methods	
STAT 301	Probability and Statistics	
Natural Science with Lab for Science and Engineering Majors (two courses plus their respective labs required, usually completed during second, third, or fourth year). Complete two courses including their accompanying labs and from two different disciplines by choosing from the following list:		8
<i>Biology</i>		
BIOL 114	Organisms and Environments	
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	
BIOL 227	Anatomy and Physiology I	
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	
<i>Botany</i>		
PLSC 205	General Botany	
REM 341	Systematic Botany	
<i>Chemistry</i>		
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	

CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	
<i>Environmental Science</i>		
ENVS 101 & ENVS 102	Introduction to Environmental Science and Field Activities in Environmental Sciences	
<i>Geography</i>		
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
<i>Geology</i>		
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 102 & 102L	Historical Geology and Historical Geology Lab	
<i>Physics</i>		
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
<i>Soils</i>		
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Total Hours		89

Courses to total 120 credits for this degree, not counting ENGL 101, MATH 143, and other courses that might be required to remove deficiencies.

A minimum grade of 'C' is required in the following courses in order to graduate:

Code	Title	Hours
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
MATH 170	Calculus I	4
MATH 176	Discrete Mathematics	3
MATH 175	Calculus II	4

Students majoring in computer science must earn a grade of C or better in CS 120, CS 121, and CS 150 and a C or better in MATH 176 before registration is permitted in 200 level CS courses.

Students must consult with their advisors when selecting electives within the curriculum to help ensure that their career objectives are met.

Fall Term 1	Hours
COMM 101 Fundamentals of Oral Communication	3
CS 120 Computer Science I	4
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
MATH 144 Analytic Trigonometry	1
Humanistic and Artistic Ways of Knowing Course	3
Hours	17
Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
CS 121 Computer Science II	3

CS 150	Computer Organization and Architecture	3
MATH 170	Calculus I	4
MATH 176	Discrete Mathematics	3
Hours		16
Fall Term 2	Hours	
CS 210	Programming Languages	3
MATH 175	Calculus II	4
Science with Lab Course (from approved list above)		4
Elective Course(s)		1
Hours		12
Spring Term 2	Hours	
CS 240	Computer Operating Systems	3
CS 270	System Software	3
CYB 220	Secure Coding and Analysis	3
STAT 301 or STAT 251	Probability and Statistics or Statistical Methods	3
Science with Lab Course (from approved list above)		4
Hours		16
Fall Term 3	Hours	
CS 383	Software Engineering	4
CS 385	Theory of Computation	3
MATH 330	Linear Algebra	3
Major Technical Elective Course (UPDV Computer Science or Cybersecurity)		3
Social and Behavioral Ways of Knowing Course		3
Hours		16
Spring Term 3	Hours	
CS 360	Database Systems	4
CS 395	Analysis of Algorithms	3
ENGL 317	Technical Writing II	3
Major Technical Elective Course (UPDV Computer Science or Cybersecurity)		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Fall Term 4	Hours	
CS 445	Compiler Design	4
CS 480	CS Senior Capstone Design I	3
Elective Course(s)		1
American Diversity Course		3
Hours		11
Spring Term 4	Hours	
CS 481	CS Senior Capstone Design II	3
Major Technical Elective Course (UPDV Computer Science or Cybersecurity)		3
Major Technical Elective Course (UPDV Computer Science or Cybersecurity)		3
International Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Total Hours		119

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates of the program will be able to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
2. Graduates of the program will be able to communicate effectively in a variety of professional contexts.

3. Graduates of the program will be able to analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
4. Graduates of the program will be able to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Graduates of the program will be able to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Graduates of the program will be able to apply computer science theory and software development fundamentals to produce computing-based solutions.

Computer Science (M.S.)

Master of Science in Computer Science

A graduate degree in computer science from UI prepares a student for a lifetime of discovery. It enables the graduate to advance the state of the art in computing, not merely to keep up with it. The graduate program develops the student's critical thinking, investigatory, and expository skills. The student will learn the foundations of computer science theory and application as well as the interaction between the two. By understanding the extent and limitation of current knowledge in Computer Science (CS), the graduate will learn to understand what issues are important and why. Students will acquire the methodological skills to resolve important open problems and tackle challenging new projects. Students will learn to present problems and solutions both orally and in writing. For examples of active research areas, please visit the Computer Science Department's website (<https://www.uidaho.edu/engr/departments/cs/>).

Academic Background and Admission Requirements

The study of computer science at the graduate level requires mathematical maturity, skill in the use of high-level and machine-level programming languages, and basic knowledge of computer hardware. Admission to this program is highly competitive. An undergraduate degree in Computer Science is not a requirement. Students with a bachelor's degree from other closely allied undergraduate programs will be considered. Students who wish to enter the graduate program must ultimately demonstrate competence in specific areas equivalent to the material covered in several of the undergraduate computer science core courses. We expect at least a 3.0 undergraduate GPA, but take into account other student achievements. International students for whom English is a second language must have a TOEFL score of 550 or higher for the written test, 213 or higher for the computer based test, or 79 or higher for the internet-based test.

As a prerequisite to graduate program admission, competence in the following areas must be demonstrated: knowledge of a structured, high-level language; algorithms and data structures; and a full year of calculus. If prerequisite requirements are met, a student who does not have an adequate coursework background in computer science may be admitted with deficiencies. The student must then demonstrate knowledge of this material early on in their graduate studies by either taking the GRE Computer Science Subject Test and receiving a score in the 60th percentile or higher or by completing those deficient courses. Deficiency areas for graduate work in computer science are computer organization and architecture; computer languages; computer operating systems; software engineering; analysis of algorithms; and theory of

computation. Credit for deficiency courses cannot be counted toward the total credits required for the graduate degree.

Degree Requirements

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Computer Science. See the College of Graduate Studies Catalog section (<https://catalog.uidaho.edu/colleges-related-units/graduate-studies/>) for the general requirements applicable to each degree. 300-level courses required in the B.S.C.S. curriculum may not be used to satisfy the requirements of the graduate degree.

A graduate degree represents mastery of the theory underlying one's discipline, a graduate breadth requirement. This is the foundation on which further study should be based. The student must also acquire depth in at least one major area by developing a focused plan of study in consultation with the major advisor. This should be a program that investigates some aspect of computer science in depth, consistent with the goals of the graduate program in computer science.

The following are requirements for receiving an M.S. degree in computer science from UI. There is both a thesis and a non-thesis option. In both options, the student must complete courses in the graduate CS core and in a focused plan of study.

Thesis Option Requirements

The thesis option requires at least 30 credit hours of study. Specific requirements are:

- At least one semester of *CS Graduate Seminar* (CS 501)
- Three credits of *CS and Cyber Research Methods* (CS 507)
- At least six credits of *Master's Research and Thesis* (CS 500)

Although there is no limit on the number of thesis research credits that may be earned, a minimum of six credits of CS 500 is required; a maximum of ten credits may be used in the study plan for the thesis degree option.

The study plan must include at least 18 credits at the 500-level and at least 18 credits in courses with a CS prefix. CS 500-level courses may count for both of these requirements.

The thesis must be in the approved format, must represent significant scholarly achievement, and must also be presented at a public colloquium.

Non-Thesis Option Requirements

The non-thesis option requires at least 30 credit hours of study. Specific requirements are:

- At least one semester of *CS Graduate Seminar* (CS 501)
- Three credits of *CS and Cyber Research Methods* (CS 507)
- At least three credits of Non-thesis *Master's Research* (CS 599) and/or Graduate Project (CS 580)

There is a limit on the number of credits earned in non-thesis research (CS 599); the maximum allowed in the study plan for the non-thesis option is six.

The study plan must include at least 18 credits at the 500-level and at least 18 credits in courses with a CS prefix. CS 500-level courses may count for both of these requirements.

At the end of the program, non-thesis students must pass a comprehensive examination that covers their graduate studies.

Please see the Computer Science Graduate Student Handbook for details and program requirements on earning this degree.

1. In-depth knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
2. Understanding of the broader implications of research for their field and for society.
3. Ability to clearly present, in written form, research results and the broader implications of that research for both the field and society.
4. Ability to clearly present, in oral form, research results and the broader implications of that research for both the field and society.
5. Ability to do original research and to appropriately and accurately analyze the results.

Computer Science (Ph.D.) Doctor of Philosophy, Major in Computer Science

A graduate degree in computer science from UI prepares a student for a lifetime of discovery. It enables the graduate to advance the state of the art in computing, not merely to keep up with it. The graduate program develops the student's critical thinking, investigatory, and expository skills. The student will learn the foundations of computer science theory and application as well as the interaction between the two. By understanding the extent and limitation of current knowledge in computer science, the graduate will learn to understand what issues are important and why. Students will acquire the methodological skills to resolve important open problems and tackle challenging new projects. Students will learn to present problems and solutions both orally and in writing. For examples of active research areas, please visit the Computer Science Department's website (<https://www.uidaho.edu/engr/departments/cs/>).

Academic Background and Admission Requirements

The study of computer science at the graduate level requires mathematical maturity, skill in the use of high-level and machine-level programming languages, and basic knowledge of computer hardware. Admission to this program is highly competitive. An undergraduate degree in Computer Science is not a requirement. Students with a bachelor's degree from other closely allied undergraduate programs will be considered. Students who wish to enter the graduate program must ultimately demonstrate competence in specific areas equivalent to the material covered in several of the undergraduate computer science core courses. We expect at least a 3.0 undergraduate GPA, but take into account other student achievements. International students for whom English is a second language must have a TOEFL score of 550 or higher for the written test, 213 or higher for the computer based test, or 79 or higher for the internet-based test.

As a prerequisite to graduate program admission, competence in the following areas must be demonstrated: knowledge of a structured, high-level language; algorithms and data structures; and a full year of calculus. If prerequisite requirements are met, a student who does not have an adequate coursework background in computer science may be admitted with deficiencies. The student must then demonstrate knowledge of this material early on in their graduate studies by either taking the GRE Computer Science Subject Test and receiving a score in

the 60th percentile or higher or by completing those deficiency courses. Deficiency areas for graduate work in computer science are computer organization and architecture; computer languages; computer operating systems; software engineering; analysis of algorithms; and theory of computation. Credit for deficiency courses cannot be counted toward the total credits required for the graduate degree.

Degree Requirements

Candidates must fulfill the requirements of the College of Graduate Studies and the Department of Computer Science. See the College of Graduate Studies Catalog section (<https://catalog.uidaho.edu/colleges-related-units/graduate-studies/>) for general regulations applicable to all graduate degrees plus the College of Graduate Studies Catalog section for Doctoral degrees (<https://catalog.uidaho.edu/colleges-related-units/graduate-studies/doctoral-degrees/>).

The PhD degree represents a continuation in the mastery of the theory underlying computer science. A doctoral student develops a graduate program of at least 78 semester hours in consultation with their major professor and supervisory committee. The PhD graduate candidate must successfully complete the CS graduate breadth requirement. As a part of the program, the student is required to include at least two semesters of CS 501 *Graduate Seminar* (two credits minimum) and CS 507 *CS and Cyber Research Methods* course (three credits). The student must have at least one full semester of instructional experience with the teaching assignment determined by the student's supervisory committee. There is no foreign language requirement. The student must satisfy the residency requirement by spending at least two semesters at the Moscow campus or a UI Residence Center. The purpose of the residency requirement is to provide the student with access to facilities, faculty, and colleagues. 300-level courses required in the B.S.C.S. curriculum may not be used to satisfy the requirements of the graduate degree.

The qualifying examination is a written and/or oral examination, administered by the student's graduate committee, covering fundamental areas of computer science. The preliminary examination is an examination of a student's proposed dissertation research, including both a written proposal and an oral public presentation covering related research, preliminary results, and a research plan. The student must produce a dissertation presenting an original and significant contribution to computer science. The dissertation should be publishable, in whole or in part, and should demonstrate the ability of the candidate to successfully initiate and pursue a significant, original research project. A public presentation and defense of the final dissertation is required. It is expected that all PhD students will publish the results of their research before completion of their degree.

Please see the Computer Science Graduate Student Handbook for details and program requirements on earning this degree.

1. Ability to advance the frontier of knowledge in designated research area of computer science.
2. Ability to do original research and to appropriately and accurately analyze the results.
3. Ability to clearly present, in oral and written form, research results and the broader implications of that research for both the field and society.
4. Demonstrated understanding of the broader implications of their research for both the field and for society.

Computer Science Minor

Code	Title	Hours
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
MATH 176	Discrete Mathematics	3
Select 6 credits of Elective courses:		6
CS 210	Programming Languages	
CS 240	Computer Operating Systems	
CS 270	System Software	
Total Hours		19

Courses to total 19 credits for this minor

Cybersecurity (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
CYB 110	Cybersecurity and Privacy	3
CYB 210	Cybersecurity Architectures and Management	3
CYB 220	Secure Coding and Analysis	3
CYB 310	Cybersecurity Technical Foundations	3
CYB 330	Networking and Control Systems	3
CYB 340	Network Defense	3
CYB 350	Operating System Defense	3
CYB 380	Cybersecurity Lab I	3
CYB 381	Cybersecurity Lab II	3
CYB 401	Cybersecurity as a Profession	1
CYB 420	Digital Forensics	3
CYB 440	Software Vulnerability Analysis	3
CYB 480	Cybersecurity Senior Capstone Design I	3
CYB 481	Cybersecurity Senior Capstone Design II	3
CS 112	Computational Thinking and Problem Solving	3
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
CS 383	Software Engineering	4
ENGL 317	Technical Writing II	3
MATH 160 or MATH 170	Survey of Calculus Calculus I	4
MATH 176	Discrete Mathematics	3
PHIL 103	Introduction to Ethics	3
STAT 251 or STAT 301	Statistical Methods Probability and Statistics	3
Total Hours		82

Courses to total 120 credits for this degree

Fall Term 1		Hours
CYB 110	Cybersecurity and Privacy	3
CS 112	Computational Thinking and Problem Solving	3
MATH 143	College Algebra	3
ENGL 101	Writing and Rhetoric I	3
PHIL 103	Introduction to Ethics	3
Hours		15
Spring Term 1		Hours
CS 120	Computer Science I	4
MATH 176	Discrete Mathematics	3
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
Scientific Ways of Knowing Course		4
Hours		17
Fall Term 2		Hours
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
CYB 210	Cybersecurity Architectures and Management	3
Humanistic and Artistic Ways of Knowing Course		3
MATH 160 OR MATH 170		3
Hours		15
Spring Term 2		Hours
CS 240	Computer Operating Systems	3
CS 270	System Software	3
CYB 220	Secure Coding and Analysis	3
Scientific Ways of Knowing Course		4
STAT 251 OR STAT 301		3
Hours		16
Fall Term 3		Hours
CYB 310	Cybersecurity Technical Foundations	3
CYB 330	Networking and Control Systems	3
CYB 380	Cybersecurity Lab I	3
ENGL 317	Technical Writing II	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		Hours
CS 383	Software Engineering	4
CYB 340	Network Defense	3
CYB 350	Operating System Defense	3
CYB 381	Cybersecurity Lab II	3
American Diversity Course		3
Hours		16
Fall Term 4		Hours
CYB 401	Cybersecurity as a Profession	1
CYB 420	Digital Forensics	3
CYB 480	Cybersecurity Senior Capstone Design I	3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Hours		13
Spring Term 4		Hours
CYB 440	Software Vulnerability Analysis	3
CYB 481	Cybersecurity Senior Capstone Design II	3
International Course		3
Elective Course		3
Elective Course		1
Hours		13
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of

your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Graduates of the program will have an ability to:

1. Analyze a complex computing and information management problems and to apply principles of cybersecurity, and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of cyber security.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to cybersecurity.
6. Apply security principles and practices to maintain operations in the presence of risks and threats.

Cybersecurity (M.S.)

Master of Science. Major in Cybersecurity Required Courses (both thesis and non-thesis tracks)

Code	Title	Hours
CYB 501	Cybersecurity Graduate Seminar (1 credit taken three times.)	3
CYB 507	CS and Cyber Research Methods	3
CYB 520	Digital Forensics	3
CYB 536	Advanced Information Assurance Concepts	3
CYB 540	Advanced Networking & Security	3
Total Hours		15

Non-Thesis Track

The Master of Science in Cybersecurity degree non-thesis track requires the completion of 15 credits of required courses as listed above plus 15 credits of electives and Non-thesis Master's Research. M.S. Cybersecurity non-thesis track students must complete a research project with the direction and advisement of their major professor.

Code	Title	Hours
CYB 599	Non-thesis Master's Resrch	5
Electives as agreed with Advisor		10
Total Hours		15

Courses to total 30 credits for degree

Thesis Track

The Master of Science in Cybersecurity degree thesis track requires the completion of 15 credits of required courses as listed above plus 15 credits of electives and Master's Research and Thesis. M.S. Cybersecurity thesis track students must complete and defend a thesis with the direction and advisement of their major professor and graduate committee.

Code	Title	Hours
CYB 500	Master's Research & Thesis	6-9
Electives as agreed with Advisor		6-9
Total Hours		12-18

Courses and thesis or research project to total 30 credits for this degree.

Graduates of the program will be able to use both their knowledge of cybersecurity and their communication and research skills to advance the field of cybersecurity and to apply cybersecurity in ways that benefit society.

Cybersecurity Minor

Code	Title	Hours
CYB 110	Cybersecurity and Privacy	3
CYB 210	Cybersecurity Architectures and Management	3
CYB 401	Cybersecurity as a Profession	1
PHIL 103	Introduction to Ethics	3
One programming course from the following:		3-4
CS 120	Computer Science I	
CS 112	Computational Thinking and Problem Solving	
CS 212	Practical Python	
MATH 183	Introduction to Data Science in Python	
Two subject courses from the following:		6
ACCT 305	Accounting Information Systems	
CRIM 101	Introduction to Criminology	
CRIM 333	Elite and White Collar Crime	
CS 121	Computer Science II	
CYB 220	Secure Coding and Analysis	
MATH 176	Discrete Mathematics	
MATH 415	Cryptography	
MIS 350	Managing Information	
PHIL 202	Introduction to Symbolic Logic	
PHIL 312	Decision Theory	
PHIL 208	Business Ethics	
POLS 410	Game Theory	
POLS 467	Constitutional Law	
Total Hours		19-20

Courses to total 19 credits for this minor

Cybersecurity Undergraduate Academic Certificate

Required Coursework:

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
CS 150	Computer Organization and Architecture	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
CS 336	Introduction to Information Assurance	3
CS 438	Network Security	3

CS 439	Applied Security Concepts	3
CS 447	Digital Forensics	3
Total Hours		21

Courses to total 21 credits for this certificate.

Degree Map or Plan of Study:

First Year		Hours
Fall Term 1		
CS 150	Computer Organization and Architecture	3
Hours		3
Spring Term 1		
CS 240	Computer Operating Systems	3
CS 270	System Software	3
Hours		6
Second Year		
Fall Term 2		
CS 336	Introduction to Information Assurance	3
Hours		3
Spring Term 2		
CS 438	Network Security	3
CS 439	Applied Security Concepts	3
Hours		6
Third Year		
Fall Term 3		
CS 447	Digital Forensics	3
Hours		3
Total Hours		21

This degree map or plan of study is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Graduates of this program will be able to:

- 1: Apply security principles and practices to the environment, hardware, software, and human aspects of a system.
- 2: Analyze and evaluate systems with respect to maintaining operations in the presence of risks and threats.
- 3: Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

Robotics Engineering Graduate Certificate

Robotic Engineering Graduate Certificate

This certificate will produce students that have a deep understanding of the Robotics stack from the lower level motors and controllers, through PLC controllers and into higher level cognitive processes including using modern AI techniques. Designed to encourage research in robotics by MS and PhD graduate students.

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
CS 553	Robotic Systems Engineering I	3
CS 554	Robotic Systems Engineering II	3
Any 2 of the following:		6
CS 543	Embedded Systems	
CS 544	Supervisory Control and Critical Infrastructure Systems	
CS 549	Fault/Tolerant Systems	
CS 552	Real Time Operating Systems	
CS 555	Machine Vision	
CS 566	PLC Programming for Automation	
CS 570	Artificial Intelligence	
CS 572	Evolutionary Computation	
CS 574	Deep Learning	
CS 575	Machine Learning	
CS 577	Python for Machine Learning	
ME 554	Assistive Technologies for Physical Impairment	
ME 564	Robotics: Kinematics, Dynamics, and Control	
Total Hours		12

Courses to total 12 credits for this certificate

Robotics Systems Undergraduate Academic Certificate

Undergraduate Robotics Systems Academic Certificate

Certificate Objectives:

Robotic automation has spread through all different types of manufacturing, food processing, and agriculture. The key to companies remaining competitive is to continue to increase productivity through automation using robotics. This certificate produces students that have a deep understanding of the Robotics stack from the lower level motors and controllers, through PLC controllers and into higher level cognitive processes including using modern AI techniques.

All required coursework must be completed with a grade of 'C' or better (O-10-a (<https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/>)).

Required Coursework:

Code	Title	Hours
Required Coursework		
CS 453	Robotic Systems Engineering I	3
CS 454	Robotic Systems Engineering II	3
CS 443	Embedded Systems	3
Any 3 courses of the following:		9
CS 466	PLC Programming for Automation	
CS 455	Machine Vision	
CS 452	Real-Time Operating Systems	
CS 470	Artificial Intelligence	
CS 472	Evolutionary Computation	
CS 474	Deep Learning	
CS 475	Machine Learning	
CS 477	Python for Machine Learning	

CS 449	Fault-Tolerant Systems	
CS 444	Supervisory Control and Critical Infrastructure Systems	
ME 454	Assistive Technologies for Physical Impairment	
ME 464	Robotics: Kinematics, Dynamics, and Control	
Total Hours		18

Courses to total 18 credits for this certificate

Students should consult with their academic advisor regarding this certificate.

1. Graduates will be able to apply modern software design and engineering principles and practices to the hardware, software, safety and environmental aspects of a robotic system.
2. Graduates will be able to analyze, evaluate and design parts of the robotic stack and will be able to communicate with other disciplines working on robotic systems.

Secure and Dependable Computing Systems Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
CS 536	Advanced Information Assurance Concepts	3
CS 538	Network Security	3
CS 547	Digital Forensics	3
Select 9 credits of Electives:		9
CS 504	Special Topics	
CS 539	Applied Security Concepts	
CS 544	Supervisory Control and Critical Infrastructure Systems	
or ECE 544	Supervisory Control and Critical Infrastructure Systems	
CS 549	Fault/Tolerant Systems	
ECE 569	Resilient Control of Critical Infrastructure	
Total Hours		18

Courses to total 18 credits for this certificate

Department of Electrical and Computer Engineering

Joseph (Joe) Law, Term Chair (214 Buchanan Engr. Lab. 83844-1023; phone 208-885-7263; www.ece.uidaho.edu (<http://www.ece.uidaho.edu/>)).

The Department of Electrical and Computer Engineering offers degree programs in the closely related fields of electrical engineering and computer engineering. The electrical engineering program spans the subdisciplines of analog electronics, electric power, electromagnetics, computers, and communication and control systems. The computer engineering program focuses on the architecture, programming, and application of digital computers. Bachelor of Science, Master of

Science, and Master of Engineering degrees are offered in both electrical engineering and computer engineering. The Doctor of Philosophy degree is offered in electrical engineering and encompasses research in both electrical and computer engineering.

Mission and Vision

The mission of the department is to educate students for the professional practice of electrical and computer engineering by offering undergraduate and graduate programs that encourage lifelong learning, foster teamwork and leadership, and promote creative discovery. The department is committed to maintaining the highest possible standards in teaching, scholarship, advising, and service. The vision of the department is to continue to expand its role in the state and region as a provider of outstanding undergraduate and graduate education programs in electrical and computer engineering.

Continuous Improvement

The department uses a continuous improvement process to attain the program educational objectives set forth below. Each of the broad objectives is associated with a number of specific student outcomes that are measured by a variety of assessment tools. Programs are assessed annually to identify problems and initiate changes to ensure that program objectives are being met. Additional information about the assessment and continuous improvement process is available under the department web page.

The department is proud of its over 100-year history and its more than 2,500 alumni. Our graduates have become productive engineers and industrial and community leaders all over the nation and the world, and they are actively recruited by major employers of electrical and computer engineers. Both the Electrical and Computer Engineering programs are accredited by the Engineering Accreditation Commission of ABET at 111 Market Place, Suite 1050, Baltimore, MD 21202-4012, who can be contacted at 410-347-7700. Graduates of our program consistently score higher than the national average on the Fundamentals of Engineering examination administered by the National Council of Examiners for Engineering and Surveying.

The department offices and laboratories are located in the Buchanan Engineering Laboratory and the Gauss-Johnson Laboratory on the Moscow campus. Courses are also offered through branch campuses located in Boise, Idaho Falls, and Coeur d'Alene, and through the Engineering Outreach program.

Electrical Engineering Undergraduate Program

Electrical engineering involves the application of electrical phenomena for the benefit of society. Electrical engineers design and use circuits and systems for computers, instruments, communications devices, and power conversion equipment.

Program Educational Objectives

The program educational objectives of the electrical engineering program are to produce graduates who:

1. Learn and Integrate: Graduates of the program will demonstrate proficiency in identifying, formulating, and solving engineering problems by applying their knowledge and understanding of mathematics, science, and engineering.
2. Think and Create: Graduates of the program will demonstrate proficiency in designing analog and digital circuits and systems, power systems, control systems, or computing systems. They will

demonstrate the capabilities of analyzing, designing, implementing, and verifying circuits, devices, and systems to meet specified requirements while considering real-world constraints.

3. **Communicate:** Graduates of the program will demonstrate an ability to communicate effectively through oral and written media to interdisciplinary groups, including team members, constituents, and the public.
4. **Clarify Purpose and Perspective:** Graduates of the program will engage in lifelong learning activities to further develop their technical and professional capabilities and skills.
5. **Practice Citizenship:** Graduates of the program will demonstrate knowledge of professional and ethical responsibility. They will consider the societal impact of their work, and/or add value to the profession and to society through active engagement in professional societies, community services, and outreach to future generations of engineers.

Students in the electrical engineering program are assigned an advisor upon entry into the program. The advisor helps the student prepare appropriate class schedules each semester and provides guidance on other academic and professional issues. Students can take an electrical engineering course in their freshman year that introduces them to the field and helps prepare them for further study. Required courses in the freshman year help develop a solid foundation in physics, chemistry, mathematics, and writing. Foundation courses in science, mathematics, and engineering are continued in the sophomore year, including the first two courses in electrical circuits. The junior year exposes the student to a wide variety of electrical engineering courses to develop breadth in electrical engineering knowledge and skills. In the senior year, students specialize in specific areas of electrical engineering through the choice of technical electives. Students also take a two-semester sequence of design courses where students learn to design, test, and build an electrical engineering circuit or system. Additional courses in the humanities, social sciences, and English help prepare the graduate to become a well-rounded and productive member of society.

Computer Engineering Undergraduate Program

Computer engineering involves the application of the principles of electrical engineering and computer science for the benefit of society. Computer engineers design and use digital computers for instrumentation, control, communication, and power conversion systems.

Program Educational Objectives

The program educational objectives of the computer engineering program are to produce graduates who:

1. **Learn and Integrate:** Graduates of the program will demonstrate proficiency in identifying, formulating, and solving engineering problems by applying their knowledge and understanding of mathematics, science, and engineering.
2. **Think and Create:** Graduates of the program will demonstrate proficiency in analysis and design of hardware and software-based systems using modern methods and tools to meet specified requirements while considering real-world constraints.
3. **Communicate:** Graduates of the program will demonstrate an ability to communicate effectively through oral and written media to interdisciplinary groups, including team members, constituents, and the public.
4. **Clarify Purpose and Perspective:** Graduates of the program will engage in lifelong learning activities to further develop their technical and professional capabilities and skills.
5. **Practice Citizenship:** Graduates of the program will demonstrate knowledge of professional and ethical responsibility. They will consider the societal impact of their work, and/or add value to the profession and to society through active engagement in professional societies, community services, and outreach to future generations of engineers.

Students in the computer engineering program are assigned an advisor upon entry into the program. The advisor helps the student prepare appropriate class schedules each semester and provides guidance on other academic and professional issues. In the freshman year, students take introductory courses in physics, mathematics, and computer science to help develop a solid foundation based on these fundamental areas. The sophomore year continues with more physics and mathematics, but also introduces the students to more advanced courses in computer science, computer engineering, and electrical circuits. The junior year provides breadth in several areas of electrical and computer engineering and computer science including electronics, signals and systems, microcontrollers, programming languages, and operating systems. The senior year allows the student to develop some depth of knowledge in selected areas through a variety of technical elective courses. In addition, the student takes a two-semester sequence of design courses where students learn to design, test, and build a computer engineering system. Additional courses in the humanities, social sciences, English, and public speaking help prepare the graduate to become a well-rounded and productive member of society.

Note: In addition to college requirements for admission to classes (see "Admission to Classes (p. 246)" under the College of Engineering (p. 246) section), students majoring in electrical engineering or computer engineering must earn a grade of C or better in certain lower division courses and a passing grade in ECE 292 as prerequisite to any upper-division course in electrical engineering or computer engineering. Advisor's approval is required for admission to all ECE courses.

Majors

- Computer Engineering (B.S.Comp.E.) (p. 269)
- Electrical Engineering (B.S.E.E.) (p. 273)

Electrical and Computer Engineering Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Electrical and Computer Engineering. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Computer Engineering (M.Engr.) (p. 272)
- Computer Engineering (M.S.) (p. 273)
- Electrical Engineering (M.Engr.) (p. 277)
- Electrical Engineering (M.S.) (p. 277)
- Electrical Engineering (Ph.D.) (p. 278)
- Power System Protection and Relaying Graduate Academic Certificate (p. 279)

Computer Engineering (B.S.Comp.E.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
ECE 101	Foundations of Electrical and Computer Engineering	2
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ECE 292	Sophomore Seminar	0
ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1
ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
ECE 440	Digital Systems Engineering	3
ECE 482	Computer Engineering Senior Design I	3
ECE 483	Computer Engineering Senior Design II	3
ECE 491	Senior Seminar	0
ENGL 317	Technical Writing II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
PHIL 103	Introduction to Ethics	3
or AMST 301	Studies in American Culture	
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
STAT 301	Probability and Statistics	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Technical Electives		
Select from upper-division computer engineering, electrical engineering, and computer science courses:		15

Total Hours**113-114**

Courses to total 128 credits for this degree, not counting ENGL 101, MATH 143, and other courses that might be required to remove deficiencies.

Students majoring in computer engineering must earn a grade of P in ECE 292 and a grade of C or better in each of the following courses for graduation, and before registration is permitted in upper-division engineering courses:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CS 120	Computer Science I	4
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1

Students majoring in computer engineering must earn a grade of C or better in each of the following courses for graduation, and before registration is permitted in 200-level CS courses:

Code	Title	Hours
CS 120	Computer Science I	4
CS 121	Computer Science II	3
CS 150	Computer Organization and Architecture	3
MATH 176	Discrete Mathematics	3

Students majoring in computer engineering must earn a grade of 'C' or better in each of the following courses for graduation, and before registration is permitted in upper-division CS courses:

Code	Title	Hours
CS 210	Programming Languages	3
CS 240	Computer Operating Systems	3
CS 270	System Software	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3

Students majoring in computer engineering must meet the college requirements for admission to classes (see "Admission to Classes (p. 246)" under college of Engineering, part four).

Any student majoring in computer engineering may accumulate no more than five (5) letter grades of 'D's and 'F's in mathematics, science, or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single class or single repeats in multiple classes and courses transferred from other

institutions. Specifically excluded are 'D' or 'F' grades from laboratory sections associated with courses.

Four-Year Plan

Fall Term 1		Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CS 120	Computer Science I	4
ENGL 101	Writing and Rhetoric I	3
MATH 170	Calculus I	4
MATH 176	Discrete Mathematics	3
Hours		18
Spring Term 1		Hours
CS 121	Computer Science II	3
ECE 101	Foundations of Electrical and Computer Engineering	2
ENGL 102	Writing and Rhetoric II	3
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		16
Fall Term 2		Hours
COMM 101	Fundamentals of Oral Communication	3
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
ECON 201 OR ECON 202 OR ECON 272		3
Hours		17
Spring Term 2		Hours
CS 150	Computer Organization and Architecture	3
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ECE 292	Sophomore Seminar	0
MATH 330	Linear Algebra	3
Social and Behavioral Ways of Knowing Course		3
Hours		17
Fall Term 3		Hours
CS 210	Programming Languages	3
CS 270	System Software	3
ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1
ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
STAT 301	Probability and Statistics	3
Hours		17
Spring Term 3		Hours
CS 240	Computer Operating Systems	3
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
ECE 440	Digital Systems Engineering	3
ENGL 317	Technical Writing II	3
AMST 301 OR PHIL 103		3
Hours		16
Fall Term 4		Hours
ECE 482	Computer Engineering Senior Design I	3
ECE 491	Senior Seminar	0
American Diversity Course		3
Humanistic and Artistic Ways of Knowing Course		3

Technical, Major Elective Course	3	
Technical, Major Elective Course	3	
Hours		15
Spring Term 4		Hours
ECE 483	Computer Engineering Senior Design II	3
International Course		3
Technical, Major Elective Course		3
Technical, Major Elective Course		3
Technical, Major Elective Course		3
Hours		15
Total Hours		131

Five-Year Plan

Fall Term 1		Hours
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
ECE 101	Foundations of Electrical and Computer Engineering	2
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Spring Term 1		Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CS 120	Computer Science I	4
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
Hours		15
Fall Term 2		Hours
CS 121	Computer Science II	3
MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
PHYS 211L	Laboratory Physics I	1
PHYS 211	Engineering Physics I	3
Hours		14
Spring Term 2		Hours
CS 150	Computer Organization and Architecture	3
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Social and Behavioral Ways of Knowing Course		3
Hours		14
Fall Term 3		Hours
CS 210	Programming Languages	3
CS 270	System Software	3
MATH 310	Ordinary Differential Equations	3
ECON 201 OR ECON 202 OR ECON 272		3
Hours		12
Spring Term 3		Hours
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ECE 292	Sophomore Seminar	0
MATH 330	Linear Algebra	3
American Diversity Course		3
Hours		14
Fall Term 4		Hours
ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1

ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
STAT 301	Probability and Statistics	3
AMST 301 OR PHIL 103		3
Hours		14
Spring Term 4		
CS 240	Computer Operating Systems	3
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
ECE 440	Digital Systems Engineering	3
ENGL 317	Technical Writing II	3
Hours		13
Fall Term 5		
ECE 482	Computer Engineering Senior Design I	3
ECE 491	Senior Seminar	0
International Course		3
Technical, Major Elective Course		3
Technical, Major Elective Course		3
Hours		12
Spring Term 5		
ECE 483	Computer Engineering Senior Design II	3
Technical, Major Elective Course		3
Technical, Major Elective Course		3
Technical, Major Elective Course		3
Hours		12
Total Hours		135

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

The student will be able to:

1. identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. communicate effectively with a range of audiences.
4. recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. acquire and apply new knowledge as needed, using appropriate learning strategies.

Computer Engineering (M.Engr.)

The Computer Engineering Program offers both Master of Science and Master of Engineering degrees. Both degrees may be earned through the Engineering Outreach off-campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of computer engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in computer engineering with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version or 550 for the paper version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in computer engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements:

1. A bachelor's degree in electrical engineering, computer science, or another engineering discipline or in a science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of computer engineering emphasized in the undergraduate curriculum. Proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents¹:

Code	Title	Hours
CS 240	Computer Operating Systems	3
ECE 240	Digital Logic	3
ECE 310	Microelectronics I	3
ECE 340	Microcontrollers	3
ECE 350	Signals and Systems I	3
ECE 440	Digital Systems Engineering	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra (does not count for the graduate credit)	3

¹

Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Engineering. Major in Computer Engineering.

To be approved, programs must satisfy the university requirements governing the M.S. degree and students must be enrolled in ECE 591 during each semester of on-campus enrollment.

Please see the Computer Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. An in-depth knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
2. The ability to use the results of applied research and other existing information necessary to carry an engineering project from conceptual through the design and production phases.
3. An understanding of the responsibility to enhance the quality of life of the global community through the practice of engineering.

Computer Engineering (M.S.)

The Computer Engineering Program offers both Master of Science and Master of Engineering degrees. Both degrees may be earned through the Engineering Outreach off-campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of computer engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in computer engineering with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version or 550 for the paper version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in computer engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

1. A bachelor's degree in electrical engineering, computer science, or another engineering discipline or in a science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of computer engineering emphasized in the undergraduate curriculum. Proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents¹:

Code	Title	Hours
CS 240	Computer Operating Systems	3
ECE 240	Digital Logic	3
ECE 310	Microelectronics I	3
ECE 340	Microcontrollers	3
ECE 350	Signals and Systems I	3
ECE 440	Digital Systems Engineering	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra (does not count for the graduate credit)	3

¹

Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Science. Major in Computer Engineering.

To be approved, programs must satisfy the university requirements governing the M.S. degree and students must be enrolled in ECE 591 during each semester of on-campus enrollment.

Please see the Computer Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. An in-depth knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
2. The ability to use the results of applied research and other existing information necessary to carry an engineering project from conceptual through the design and production phases.
3. An understanding of the responsibility to enhance the quality of life of the global community through the practice of engineering.

Electrical Engineering (B.S.E.E.)

Required coursework includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CS 120	Computer Science I	4
ECE 101	Foundations of Electrical and Computer Engineering	2
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ECE 292	Sophomore Seminar	0
ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1
ECE 320	Energy Systems I	3
ECE 321	Energy Systems I Laboratory	1
ECE 330	Electromagnetic Theory	3
ECE 331	Electromagnetics Laboratory	1
ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
ECE 480	EE Senior Design I	3
ECE 481	EE Senior Design II	3
ECE 491	Senior Seminar	0
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 360	Engineering Economy	2
ENGL 317	Technical Writing II	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4

MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
PHIL 103	Introduction to Ethics	3
or AMST 301	Studies in American Culture	
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
STAT 301	Probability and Statistics	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one upper-division Engineering Science elective:		3
ENGR 320	Engineering Thermodynamics and Heat Transfer	
ENGR 335	Engineering Fluid Mechanics	
ENGR 350	Engineering Mechanics of Materials	
ENGR 428	Numerical Methods	
MATH 428	Numerical Methods	
PHYS 428	Numerical Methods	
Select 18 credits of Technical electives taken from upper-division Engineering, Math, Physics, Statistics, and Computer Science courses: ¹		18
ECE 410	Microelectronics II	
or ECE 418	Introduction to Electronic Packaging	
ECE 420	Energy Systems II	
ECE 430	Microwave and Millimeter Wave Circuits	
or ECE 432	Propagation of Wireless Signals	
or ECE 434	Antenna Principles and Design	
ECE 440	Digital Systems Engineering	
or ECE 443	Distributed Processing and Control Networks	
ECE 450	Signals and Systems II	
ECE 460	Semiconductor Devices	
or ECE 465	Introduction to Microelectronics Fabrication	

Total Hours 114-115

¹

Students may request, after approval by their academic advisor and the Petition Committee, to use other upper division technical courses in the College of Science or in Engineering Management (EM) in partial fulfillment of this requirement. Of these eighteen credits a minimum of twelve credits must be selected from electrical engineering courses including at least nine credits from these courses.

Courses to total 128 credits for this degree, not counting ENGL 101, MATH 143, and other courses that might be required to remove deficiencies.

Students majoring in electrical engineering must earn a grade of P in ECE 292 and a grade of C or better in each of the following courses for graduation and before registration is permitted in upper-division electrical and computer engineering courses:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CS 120	Computer Science I	4
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240 & ECE 241	Digital Logic and Logic Circuit Lab	4
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1

Students majoring in electrical engineering or computer engineering must meet the college requirements for admission to classes (see "Admission to Classes (p. 246)" under College of Engineering (p. 246), part four).

Any student majoring in electrical engineering may accumulate no more than five (5) letter grades of D's and F's in mathematics, science, or engineering courses that are used to satisfy graduation requirements. Included in this number are multiple repeats of a single class or single repeats in multiple classes and courses transferred from other institutions. Specifically excluded are D or F grades from laboratory sections associated with courses.

Within the constraints on choice of technical electives noted above, students may choose sets of electives to develop proficiencies in certain areas of emphasis. Three such areas are currently available: one in communications, one in integrated circuit design, and one in power. The course requirements for each of these areas are described below.

Communications Emphasis

This emphasis prepares students for a variety of careers in the communications industry. Students should take a total of 18 credits from the following:

Code	Title	Hours
Core Courses		
Select 9 credits from the following:		9
ECE 410	Microelectronics II	
ECE 430	Microwave and Millimeter Wave Circuits	
ECE 450	Signals and Systems II	
Technical Electives		9
Select 9 credits from the following:		9
ECE 413	Radio-Frequency IC Design	
ECE 432	Propagation of Wireless Signals	
ECE 445	Introduction to VLSI Design	
ECE 452	Communication Systems	

ECE 455	Information and Coding Theory	
Total Hours		27

Microelectronics Emphasis

This emphasis prepares students for a variety of careers in the semiconductor industry. It includes courses in analog/RF and mixed-signal integrated circuit (IC) design, semiconductors, and IC packaging. Students should take a total of 18 credits from the following:

Code	Title	Hours
Required credits:		
ECE 410	Microelectronics II	3
ECE 460	Semiconductor Devices	3
Select 3 core credits from the following:		3
ECE 413	Radio-Frequency IC Design	
ECE 415	Analog Integrated Circuit Design	
ECE 418	Introduction to Electronic Packaging	
Select 3 credits from the following:		3
ECE 440	Digital Systems Engineering	
ECE 430	Microwave and Millimeter Wave Circuits	
ECE 450	Signals and Systems II	
ECE 465	Introduction to Microelectronics Fabrication	
Select 6 additional credits of technical electives from the following:		6
ECE 413	Radio-Frequency IC Design	
ECE 415	Analog Integrated Circuit Design	
ECE 417	Mixed Signal IC Design	
ECE 418	Introduction to Electronic Packaging	
ECE 419	Image Sensors and Systems	
ECE 445	Introduction to VLSI Design	
ECE 462	Quantum Mechanics for Electrical Engineers	
ECE 465	Introduction to Microelectronics Fabrication	
Total Hours		18

Power Emphasis

This emphasis prepares students for a variety of careers with electric utilities, consulting firms, and manufacturing and design firms. Students should take a total of 18 credits from the following:

Code	Title	Hours
ECE 420	Energy Systems II	3
ECE 422	Power Systems Analysis	3
ECE 427	Power Electronics	3
ECE 450	Signals and Systems II	3
Select 3 credits from the following:		3
ECE 410	Microelectronics II	
ECE 430	Microwave and Millimeter Wave Circuits	
ECE 440	Digital Systems Engineering	
Select 3 additional credits of technical electives:		3
Total Hours		18

Four-Year Plan

Fall Term 1	Hours
CS 120 Computer Science I	4
ENGL 101 Writing and Rhetoric I	3

MATH 170	Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3

Hours 17

Spring Term 1

CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ECE 101	Foundations of Electrical and Computer Engineering	2
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
ENGL 102	Writing and Rhetoric II	3

Hours 17

Fall Term 2

ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ENGR 210	Engineering Statics	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
AMST 301 OR PHIL 103		3

Hours 17

Spring Term 2

ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ECE 292	Sophomore Seminar	0
ENGR 220	Engineering Dynamics	3
MATH 275	Calculus III	3
ECON 201 OR ECON 202 OR ECON 272		3

Hours 17

Fall Term 3

ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1
ECE 320	Energy Systems I	3
ECE 321	Energy Systems I Laboratory	1
ECE 330	Electromagnetic Theory	3
ECE 331	Electromagnetics Laboratory	1
ENGR 360	Engineering Economy	2

Hours 17

American Diversity Course

Hours 17

Spring Term 3

ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3
ENGR 320 OR ENGR 335 OR ENGR 350 OR ENGR 428 OR MATH 428 OR PHYS 428		3

Hours 17

Fall Term 4

ECE 480	EE Senior Design I	3
ECE 491	Senior Seminar	0
ENGL 317	Technical Writing II	3
UPDV Technical, Major Elective Course		3
International Course		3
Social and Behavioral Ways of Knowing Course		3
ECE 410 OR ECE 418 OR ECE 420 OR ECE 430 OR ECE 432 OR ECE 434 OR ECE 440 OR ECE 443 OR ECE 450 OR ECE 460 OR ECE 465		3

Hours 18

Spring Term 4		
ECE 481	EE Senior Design II	3
UPDV Technical, Major Elective Course		3
UPDV Technical, Major Elective Course		3
ECE 410 OR ECE 418 OR ECE 420 OR ECE 430 OR ECE 432 OR ECE 434 OR ECE 440 OR ECE 443 OR ECE 450 OR ECE 460 OR ECE 465		3
ECE 410 OR ECE 418 OR ECE 420 OR ECE 430 OR ECE 432 OR ECE 434 OR ECE 440 OR ECE 443 OR ECE 450 OR ECE 460 OR ECE 465		3
Hours		15
Total Hours		135

Five-Year Plan

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
CS 112	Computational Thinking and Problem Solving	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		13

Spring Term 1		Hours
CS 120	Computer Science I	4
ECE 101	Foundations of Electrical and Computer Engineering	2
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
Hours		13

Fall Term 2		Hours
CHEM 111L	General Chemistry I Laboratory	1
CHEM 111	General Chemistry I	3
MATH 175	Calculus II	4
MATH 330	Linear Algebra	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		15

Spring Term 2		Hours
ECE 210	Electrical Circuits I	3
ECE 211	Electrical Circuits Lab I	1
ECE 292	Sophomore Seminar	0
ENGR 210	Engineering Statics	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Hours		14

Fall Term 3		Hours
ECE 212	Electrical Circuits II	3
ECE 213	Electrical Circuits II Lab	1
ECE 240	Digital Logic	3
ECE 241	Logic Circuit Lab	1
ENGR 220	Engineering Dynamics	3
MATH 275	Calculus III	3
Hours		14

Spring Term 3		Hours
ECE 310	Microelectronics I	3
ECE 311	Microelectronics I Lab	1
STAT 301	Probability and Statistics	3
Oral Communication Course		2
Social and Behavioral Ways of Knowing Course		3
ECON 201 OR ECON 202 OR ECON 272		3
Hours		15

Fall Term 4		Hours
ECE 320	Energy Systems I	3
ECE 321	Energy Systems I Laboratory	1
ECE 330	Electromagnetic Theory	3

ECE 331	Electromagnetics Laboratory	1
ENGR 360	Engineering Economy	2
AMST 301 OR PHIL 103		3

Hours **13**

Spring Term 4		Hours
ECE 340	Microcontrollers	3
ECE 341	Microcontrollers Lab	1
ECE 350	Signals and Systems I	3
ECE 351	Signals and Systems I Lab	1
UPDV Technical, Major Elective Course		3
ENGR 320 OR ENGR 335 OR ENGR 350 OR ENGR 428 OR MATH 428 OR PHYS 428		3

Hours **14**

Fall Term 5		Hours
ECE 480	EE Senior Design I	3
ECE 491	Senior Seminar	0
ENGL 317	Technical Writing II	3
International Course		3
UPDV Technical, Major Elective Course		3
(ECE 450 AND ECE 460)		3

Hours **15**

Spring Term 5		Hours
ECE 481	EE Senior Design II	3
UPDV Technical, Major Elective Course		3
American Diversity Course		3
(ECE 450 AND ECE 460)		3
(ECE 450 AND ECE 460)		3

Hours **15**

Total Hours **141**

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript, and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

The student will be able to:

1. identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. communicate effectively with a range of audiences.
4. recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. acquire and apply new knowledge as needed, using appropriate learning strategies.

Electrical Engineering (M.Engr.)

The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off-campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of electrical engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in electrical engineering with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version, or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements:

1. A bachelor's degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents.¹

Code	Title	Hours
Power Area ¹		
ECE 212	Electrical Circuits II	3
ECE 320	Energy Systems I	3
ECE 329	Background Study in Energy Systems	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 420	Energy Systems II	3
Electromagnetics Area ¹		
ECE 212	Electrical Circuits II	3
ECE 330	Electromagnetic Theory	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 432	Propagation of Wireless Signals	3
ENGR 210	Engineering Statics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Microelectronics Area ¹		

ECE 212	Electrical Circuits II	3
ECE 310	Microelectronics I	3
ECE 319	Background Study in Electronics	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 410	Microelectronics II	3
Systems Area		
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3

¹

Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Engineering. Major in Electrical Engineering.

General M.Engr. requirements apply, except that the department requires at least 30 credits of coursework. Students, with the assistance of their major professor, prepare their own program as soon as possible during their first semester and submit it to the faculty for approval. To be approved, programs must satisfy both the university requirements governing the M.Engr. degree and the following department requirements:

1. At least 18 credits in electrical engineering courses numbered 500 or above.
2. At least three electrical engineering courses in a given area for depth, two of which must be numbered 500 or above.
3. At least one course in each of two areas (outside the areas selected under item 2) to provide breadth.
4. Enrollment in ECE 591, Electrical Engineering Research Colloquium, during each semester of on-campus enrollment.

Please see the Electrical Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The ability to use the results of applied research and other existing information necessary to carry an engineering project from conceptual through the design and production phases.
2. An in-depth knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
3. The ability to use the results of applied research and other existing information necessary to carry an engineering project from conceptual through the design and production phases.
4. The ability to communicate professional work in an appropriate format.

Electrical Engineering (M.S.)

The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students

an opportunity to strengthen their knowledge of electrical engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in electrical engineering with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements:

1. A bachelor's degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents.

Code	Title	Hours
Power Area ¹		
ECE 212	Electrical Circuits II	3
ECE 320	Energy Systems I	3
ECE 329	Background Study in Energy Systems	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 420	Energy Systems II	3
Electromagnetics Area ¹		
ECE 212	Electrical Circuits II	3
ECE 330	Electromagnetic Theory	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 432	Propagation of Wireless Signals	3
ENGR 210	Engineering Statics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Microelectronics Area ¹		
ECE 212	Electrical Circuits II	3
ECE 310	Microelectronics I	3
ECE 319	Background Study in Electronics	3
ECE 350	Signals and Systems I	3

ECE 359	Background Study in Signals and Systems Analysis	3
ECE 410	Microelectronics II	3
Systems Area		
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3

¹

Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Master of Science. Major in Electrical Engineering.

General M.S. requirements apply, except that the department requires at least 24 credits of coursework in addition to a thesis. The master's program may provide advanced preparation for professional practice, or it may serve as the first step in graduate study leading to the Ph.D. degree. Specific courses to be taken for the program are not prescribed by the faculty. Students, with the assistance of their major professor, prepare their own program as soon as possible during their first semester and submit it to the faculty for approval.

1. At least 18 credits in electrical engineering courses numbered 500 or above.
2. Two or more electrical engineering courses numbered above 500 in a given area for depth.
3. At least one course in each of two areas (outside the areas selected under item 2) to provide breadth.
4. Enrollment in ECE 591 during each semester of on-campus enrollment.

Please see the Electrical Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. The ability to use the results of applied research and other existing information necessary to carry an engineering project from conceptual through the design and production phases.
2. An in-depth knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
3. The ability to use the results of applied research and other existing information necessary to carry an engineering project from conceptual through the design and production phases.
4. The ability to communicate professional work in an appropriate format.

Electrical Engineering (Ph.D.)

The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off-campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of electrical engineering by

taking graduate courses that focus on advanced subject matter and by participating in research.

Qualifications for Admittance

Candidates must have a bachelor's degree in electrical engineering with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version, or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

Candidates who do not have a bachelor's degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements:

1. A bachelor's degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.
2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents.

Code	Title	Hours
Power Area ¹		
ECE 212	Electrical Circuits II	3
ECE 320	Energy Systems I	3
ECE 329	Background Study in Energy Systems	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 420	Energy Systems II	3
Electromagnetics Area ¹		
ECE 212	Electrical Circuits II	3
ECE 330	Electromagnetic Theory	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 432	Propagation of Wireless Signals	3
ENGR 210	Engineering Statics	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Microelectronics Area ¹		
ECE 212	Electrical Circuits II	3
ECE 310	Microelectronics I	3
ECE 319	Background Study in Electronics	3
ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
ECE 410	Microelectronics II	3

Systems Area

ECE 350	Signals and Systems I	3
ECE 359	Background Study in Signals and Systems Analysis	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3

¹

Does not count for graduate credit.

Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

Doctor of Philosophy. Major in Electrical Engineering.

General Ph.D. requirements apply. The preliminary examination consists of both a written and an oral examination. There is no foreign language requirement. Two semesters of ECE 591 will be required for on-campus doctoral students.

Please see the Electrical Engineering Graduate Student Handbook for details and program requirements on earning this degree.

1. Expert engineering and science knowledge in specialty field of electrical engineering.
2. The ability to advance the frontier of knowledge in designated research area of electrical engineering.
3. The ability to read and understand archival professional journals and to organize research results and express them in a form suitable for professional publication.
4. Understanding of the role of scientific and engineering research in a multicultural society, including the benefits and potential risks that actions based on this research may entail.
5. The ability to formulate abstract goals and organize scientific and technical information to structure a cohesive research effort.
6. The ability to communicate the results of research in written and other appropriate formats.

Power System Protection and Relaying Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (0-10-b (p. 94)).

Code	Title	Hours
ECE 523	Symmetrical Components	3
ECE 525	Power System Protection and Relaying	3
ECE 526	Protection of Power Systems II	3
Select 1 from the following:		3
ECE 422	Power Systems Analysis	
ECE 452	Communication Systems	
ECE 476	Digital Filtering	
ECE 524	Transients in Power Systems	
ECE 529	Utility Applications of Power Electronics	

ECE 544	Supervisory Control and Critical Infrastructure Systems
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Total Hours

12

Courses to total 12 credits for this certificate

1. Develop solid understanding of the theory of symmetrical components as applied to power systems fault analysis.
2. Develop a deeper understanding of power generation and system apparatus models for fault analysis.
3. Learn advanced fault analysis techniques.
4. Learn power systems protection and relaying fundamentals.
5. Learn to apply advanced methods for protection of transmission lines, distribution systems, buses, transformers, generators and other apparatus.
6. Gain understanding of protection challenges and solutions for inverter-based resources such as photovoltaic, wind and battery storage systems.
7. Learn how telecommunication systems are applied to improve protection system performance.

Department of Mechanical Engineering

Eric Wolbrecht, Chair (3241 Engineering/Physics Bldg. 83844-0902; phone: 208-885-0348; www.uidaho.edu/engr/ME (<http://www.uidaho.edu/engr/ME/>)).

Mechanical engineering applies the principles of science and technology to create products and systems which benefit mankind in several areas, including:

1. the conversion of energy from natural sources to provide power, light, heating and cooling, and transportation;
2. the design and production of machines to improve and lighten the burden of human work;
3. the creative planning, design, development, and operation of systems for utilizing energy, machines, and other resources;
4. the production of manufactured goods; and
5. the interface between technology and society.

Mechanical engineering is broad in scope and provides a wide range of careers for trained professionals in industry, business, government, and universities. Positions are available in design, testing, manufacturing, research, development, operations, system analysis, marketing, and administration. Mechanical engineers are often involved as professional team members in economic and social-humanistic matters and are responsible for the interaction of technical advances with social and environmental concerns.

Mission Statement

Our mission is to prepare students for entry into professional engineering practice and advanced study through our regionally-recognized program of high-quality instruction, integrated design and laboratory experience, and scholarship.

Program Educational Objectives

A few years after graduation, a University of Idaho Mechanical Engineering practitioner is expected to:

1. Attain career advancement based on demonstrated knowledge and skill in areas such as engineering analysis, programming, modeling/simulation, experimental methods, application of regulatory compliance, design for manufacturability, and integration of interdisciplinary information.
2. Achieve client and stakeholder satisfaction of engineering solutions emphasizing advanced design and analysis methodologies leading to technically informative prototypes and quality products while considering real-world constraints.
3. Use effective multimodal communication to develop engineering solutions and clearly convey meaning to intended audiences using a broad range of communication methods.
4. Seek lifelong personal and professional development through pursuits such as networking, entrepreneurship, graduate degrees, professional licenses, certifications, career advancement, and exploratory endeavors.
5. Collaborate with diverse individuals while considering public and worker safety, environmental impacts, and ethical and legal practices, to develop sustainable solutions for communities and society at large.

Mechanical Engineering Student Outcomes

Upon graduation, students will have the ability to:

1. identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
2. apply engineering design to produce solutions that meet specified needs with consideration of public health, safety and welfare, and global, cultural, social, environmental and economic factors;
3. communicate effectively with a range of audiences;
4. recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
5. function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
6. develop and conduct appropriate experimentation, analyze and interpret data and use engineering judgment to draw conclusions; and
7. acquire and apply new knowledge as needed, using appropriate learning strategies.

Undergraduate Program

Successful completion of the approved curriculum results in the award of the Bachelor of Science in Mechanical Engineering (B.S.M.E.) degree. Our program educational objectives are based on the needs of our constituencies. We focus on the professional and personal development of our students and continuously assess and improve our undergraduate curriculum. Our department is a college and university leader in the use of innovative teaching methods, vertical curriculum integration, and applied design projects. Students interact frequently and personally with the faculty and are mentored and advised by them. The strengths of our program are a solid engineering science foundation (as demonstrated by the outstanding performance of our graduates on the nationwide Fundamentals of Engineering Exam, a required precursor to becoming a licensed professional engineer); a strong design experience featuring the design and construction of several projects; and laboratory experience featuring hands-on skills, state-of-the-art instrumentation, broad exposure to instrumentation and principles, and a senior project. These strengths

also include multiple teamwork experiences, including the opportunity to lead and to serve in team roles; the substantial use of appropriate engineering tools, including the best available software; and multiple communication experiences, including written and oral presentations.

The Mechanical Engineering undergraduate program is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org> (<https://www.abet.org/>), under the General Criteria and the Program Criteria for Mechanical and Similarly Named Engineering Programs.

General questions regarding the undergraduate program should be addressed to the advising coordinator by phone at 208-885-5024 or by email at medept@uidaho.edu. Faculty members are available to discuss details of their specialty areas with interested students.

An academic minor in mechanical engineering is available. Contact the department for more information.

Graduate Program

The following graduate degrees are available in mechanical engineering: Master of Engineering (M.Engr.), Master of Science (M.S.), and the Doctor of Philosophy (Ph.D.). Minimum preparation for graduate study in mechanical engineering is a B.S. degree in a mechanical engineering program that is accredited by ABET. Students entering the program with an engineering or physical science baccalaureate degree in a major other than mechanical engineering must demonstrate proficiency in the subjects required in the B.S.M.E. program. Individual student qualifications are assessed by the departmental graduate committee, which also determines undergraduate deficiencies.

The programs of study are designed to extend the student's understanding of the fundamental engineering sciences and their application to engineering systems design and analysis. Research programs are offered with specialization in many general topics; please see the departmental website for faculty research areas. We maintain and continuously improve the graduate curriculum. Graduate students receive quality mentoring and advising.

Graduate students will develop a plan of study in consultation with their academic advisor that provides for a reasonable concentration in a particular field of interest and a selection of related courses, some of which may be taught outside of the department. For M.S. and Ph.D. students, the research topic will generally be selected by members of the departmental faculty. Candidates for the M.Engr. degree will deliver a presentation and short report for a project designated by their major professor.

We support education throughout the state of Idaho and beyond by providing quality distance education through the University of Idaho's Engineering Outreach program as well as supporting, collaborating, and including our faculty at the Boise and Idaho Falls campuses of the University.

Service

We provide engineering services (teaching, consulting, outreach, testing, and research) to support industry and national laboratories. In addition, we provide service to professional societies, the college and university, and the region. We encourage our graduates to support the improvement of our program in formal and informal ways. These include student referrals, periodic evaluation, and donations of time, equipment, and money.

Majors

- Mechanical Engineering (B.S.M.E.) (p. 281)

Minors

- Mechanical Engineering Minor (p. 285)

Mechanical Engineering Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Mechanical Engineering. Applicants for admission generally will have a B.S. degree in mechanical engineering. Those students admitted with degrees in other engineering fields will be expected to complete any undergraduate deficiencies. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Mechanical Engineering (M.Engr.) (p. 284)
- Mechanical Engineering (M.S.) (p. 284)
- Mechanical Engineering (Ph.D.) (p. 285)

Mechanical Engineering (B.S.M.E.)

This program is accredited by the Engineering Accreditation Commission of ABET, <http://www.abet.org>.

Note: Pre-advising is required to register in any ME course.

Required course work includes the university requirements (see regulation J-3 (p. 78)), completion of the Fundamentals of Engineering (FE) examination and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGR 123	First Year Engineering	2
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 335	Engineering Fluid Mechanics	3
ENGR 350	Engineering Mechanics of Materials	3
MSE 201	Elements of Materials Science	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
ME 223	Mechanical Design Analysis	3
ME 280	Programming Essentials for Engineers	3
ME 301	Computer Aided Design Methods	3
ME 313	Dynamic Modeling of Engineering Systems	3
ME 322	Mechanical Engineering Thermodynamics	3
ME 325	Machine Component Design I	3
ME 330	Experimental Methods for Engineers	3
ME 341	Intermediate Mechanics of Materials	3
ME 345	Heat Transfer	3

ME 416	FE Exam Review	1
ME 424	Mechanical Systems Design I	3
ME 426	Mechanical Systems Design II	3
ME 430	Senior Lab	3
ME 435	Thermal Energy Systems Design	3
PHIL 103	Introduction to Ethics	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Select one from the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Technical Elective requirements for Mechanical Engineering		
Select 15 credits from the following: ¹		15
BE 421	Image Processing and Computer Vision	
BE 462	Electric Power and Controls	
ENGR 360	Engineering Economy	
ENGR 428	Numerical Methods	
ENTR 414	Entrepreneurship	
ENTR 415	New Venture Creation	
MATH 371	Mathematical Physics	
MATH 420	Complex Variables	
MATH 428	Numerical Methods	
MATH 432	Numerical Linear Algebra	
MATH 437	Mathematical Biology	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 471	Introduction to Analysis I	
MATH 472	Introduction to Analysis II	
MATH 480	Partial Differential Equations	
ME 401	Engineering Team Projects	
ME 404	Special Topics	
ME 410	Principles of Lean Manufacturing	
ME 412	Gas Dynamics	
ME 413	Engineering Acoustics	
ME 414	HVAC Systems	
ME 417	Turbomachinery	
ME 420	Fluid Dynamics	
ME 421	Advanced Computer Aided Design	
ME 433	Combustion Engine Systems	
ME 436	Sustainable Energy Sources and Systems	
ME 438	Sustainability and Green Design	
ME 450	Fundamentals of Computational Fluid Dynamics	
ME 451	Experimental Methods in Fluid Dynamics	
ME 458	Finite Element Applications in Engineering	
ME 461	Fatigue and Fracture Mechanics	
ME 464	Robotics: Kinematics, Dynamics, and Control	
ME 472	Mechanical Vibrations	
ME 481	Control Systems	

ME 490	Solid Modeling, Simulation and Manufacturing Capstone	
ME 529	Combustion and Air Pollution	
ME 539	Advanced Mechanics of Materials	
ME 540	Continuum Mechanics	
ME 541	Mechanical Engineering Analysis	
ME 544	Conduction Heat Transfer	
ME 547	Thermal Radiation Processes	
ME 549	Finite Element Analysis	
ME 550	Advanced Computational Fluid Dynamics	
ME 571	Building Performance Simulation for Integrated Design	
MSE 412	Mechanical Behavior of Materials	
MSE 415	Materials Selection and Design	
MSE 417	Instrumental Analysis	
MSE 423	Corrosion	
MSE 438	Fundamentals of Nuclear Materials	
NE 438	Fundamentals of Nuclear Materials	
NE 450	Principles of Nuclear Engineering	
OM 378	Project Management	
OM 439	Systems and Simulation	
OM 456	Enterprise Quality Management	
PHYS 305	Modern Physics	
PHYS 351	Introductory Quantum Mechanics I	
PHYS 411	Advanced Physics Lab	
PHYS 428	Numerical Methods	
PHYS 443	Optics	
PHYS 464	Solid State Physics	
PHYS 465	Nuclear and Particle Physics	
PHYS 484	Astrophysics	
STAT 301	Probability and Statistics	
STAT 431	Statistical Analysis	
Any Approved 400/500 Level Course in another Engineering Discipline		
A maximum of 3 credits of the following may be selected:		
ME 307	Group Mentoring I	
ME 308	Group Mentoring II	
ME 401	Engineering Team Projects	
ME 407	Group Mentoring III	

Total Hours **113-114**

¹

Fifteen credits of technical electives are required from the list. The breakdown of credits will be as follows: six credits must be an ME upper division course, three credits must be an upper division Math, Statistics or Physics course, the remaining six credits may be any course listed.

Courses to total 128 credits for this degree, not counting ENGL 101 , MATH 143 , and other courses that might be required to remove deficiencies.

To advance to upper-division courses, a student majoring in mechanical engineering must earn certification: the student may accumulate no more than three grades of 'D' or 'F' in the mathematics, science or engineering courses used to satisfy certification requirements. Included in this

number are courses transferred from other institutions, multiple repeats of a single course, and single repeats in multiple courses.

In addition, students must also earn at least five grades of 'B' or better in these mathematics, science or engineering courses:

Code	Title	Hours
CHEM 111	General Chemistry I	3
COMM 101	Fundamentals of Oral Communication	3
ME 280	Programming Essentials for Engineers	3
ENGL 102	Writing and Rhetoric II	3
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ENGR 240	Introduction to Electrical Circuits	3
ENGR 350	Engineering Mechanics of Materials	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
ME 123	Introduction to Mechanical Design	3
ME 223	Mechanical Design Analysis	3
ME 301	Computer Aided Design Methods	3
MSE 201	Elements of Materials Science	3
PHYS 211	Engineering Physics I	3
PHYS 212	Engineering Physics II	3

A grade of 'P' (Pass) in any of these courses is considered as a 'C' grade in satisfying this certification requirement.

To graduate in this program, a student may accumulate no more than five grades of 'D' or 'F' in the mathematics, science, or engineering courses used to satisfy graduation requirements. Included in this number are multiple repeats of a single course or single repeats in multiple courses and courses transferred from other institutions.

Four-Year Plan

Fall Term 1		Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 170	Calculus I	4
ENGR 123	First Year Engineering	2
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
ENGR 210	Engineering Statics	3
MATH 175	Calculus II	4
ME 280	Programming Essentials for Engineers (Programming essentials for engineers)	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		17
Fall Term 2		Hours
ENGR 350	Engineering Mechanics of Materials	3
MSE 201	Elements of Materials Science	3
MATH 310	Ordinary Differential Equations	3
ME 223	Mechanical Design Analysis	3
PHYS 212	Engineering Physics II	3

PHYS 212L	Laboratory Physics II	1
Hours		16
Spring Term 2		Hours
ENGR 240	Introduction to Electrical Circuits	3
MATH 275	Calculus III	3
ME 301	Computer Aided Design Methods	3
ENGR 220	Engineering Dynamics	3
ME 322	Mechanical Engineering Thermodynamics	3
International Course		3
Hours		18
Fall Term 3		Hours
ENGR 335	Engineering Fluid Mechanics	3
MATH 330	Linear Algebra	3
ME 313	Dynamic Modeling of Engineering Systems	3
ME 341	Intermediate Mechanics of Materials	3
STAT/PHYS/MATH Technical, Major Elective Course		3
ECON 201 OR ECON 202 OR ECON 272		3
Hours		18
Spring Term 3		Hours
ME 325	Machine Component Design I	3
ME 330	Experimental Methods for Engineers	3
ME 345	Heat Transfer	3
PHIL 103	Introduction to Ethics	3
UPDV ME Technical, Major Elective Course		3
Technical, Major Elective Course		3
Hours		18
Fall Term 4		Hours
ME 416	FE Exam Review	1
ME 424	Mechanical Systems Design I	3
ME 430	Senior Lab	3
ME 435	Thermal Energy Systems Design	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		13
Spring Term 4		Hours
ME 426	Mechanical Systems Design II	3
UPDV ME Technical, Major Elective Course		3
Technical, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
American Diversity Course		3
Hours		15
Total Hours		131

Five-Year Plan

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
COMM 101	Fundamentals of Oral Communication	3
ENGR 123	First Year Engineering	2
Hours		12
Spring Term 1		Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
American Diversity Course		3
Hours		14
Fall Term 2		Hours
ENGR 210	Engineering Statics	3
MATH 175	Calculus II	4
ME 280	Programming Essentials for Engineers	3

PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		14
Spring Term 2		
MATH 275	Calculus III	3
MSE 201	Elements of Materials Science	3
ME 223	Mechanical Design Analysis	3
PHIL 103	Introduction to Ethics	3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Fall Term 3		
ENGR 350	Engineering Mechanics of Materials	3
ENGR 220	Engineering Dynamics	3
MATH 310	Ordinary Differential Equations	3
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Spring Term 3		
ME 301	Computer Aided Design Methods	3
ME 322	Mechanical Engineering Thermodynamics	3
Social and Behavioral Ways of Knowing Course		3
ENGR 240	Introduction to Electrical Circuits	3
ECON 201 OR ECON 202 OR ECON 272		
Hours		12
Fall Term 4		
ENGR 335	Engineering Fluid Mechanics	3
MATH 330	Linear Algebra	3
ME 341	Intermediate Mechanics of Materials	3
ME 313	Dynamic Modeling of Engineering Systems	3
MATH/STAT/PHYS TECHNICAL, Major Elective Course		3
Hours		15
Spring Term 4		
ME 325	Machine Component Design I	3
ME 330	Experimental Methods for Engineers	3
ME 345	Heat Transfer	3
Technical, Major Elective Course		3
UPDV ME Technical, Major Elective Course		3
Hours		15
Fall Term 5		
ME 416	FE Exam Review	1
ME 424	Mechanical Systems Design I	3
ME 430	Senior Lab	3
ME 435	Thermal Energy Systems Design	3
UPDV ME Technical, Major Elective Course		3
Hours		13
Spring Term 5		
ME 426	Mechanical Systems Design II	3
UPDV ME Technical, Major Elective Course		3
MATH/STAT/PHYS TECHNICAL, Major Elective Course		3
Technical, Major Elective Course		3
International Course		3
Hours		15
Total Hours		141

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the

Registrar's Office regarding your official degree/certificate completion status.

1. Students will develop an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. Students will develop an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. Students will develop an ability to communicate effectively with a range of audiences.
4. Students will develop an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
5. Students will develop an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
6. Students will develop an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.
7. Students will develop an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

Mechanical Engineering (M.Engr.) Master of Engineering. Major in Mechanical Engineering.

General M.Engr. requirements apply, along with departmental requirements as listed in the departmental graduate handbook.

Please see the Departmental Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/engr/academic-programs/me/handbooks/me-graduate-handbook.pdf?engr-pdf=graduate-student-handbookp6>) for details and program requirements on earning the Master of Engineering in Mechanical Engineering degree.

1. Graduates will be proficient engineering problem solvers capable of identifying, formulating, and solving engineering problems by applying their knowledge of mathematics, science, and engineering.
2. Graduates will be effective mechanical engineers, capable of performing original scholarly work, while considering real-world constraints and the impact their solution may have on society.
3. Graduates will give effective oral presentations in professional forums and write for professional audiences. Opportunities should be pursued to speak in front of a larger technical community and to contribute to the published literature in the discipline.

Mechanical Engineering (M.S.) Master of Science. Major in Mechanical Engineering.

General M.S. requirements apply, along with departmental requirements as listed in the departmental graduate handbook.

Please see the Departmental Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/engr/academic->

programs/me/handbooks/me-graduate-handbook.pdf?enr-pdf=graduate-student-handbookp6) for details and program requirements on earning the Master of Science in Mechanical Engineering degree.

1. Graduates will be proficient engineering problem solvers capable of identifying, formulating, and solving engineering problems by applying their knowledge of mathematics, science, and engineering.
2. Graduates will be effective mechanical engineers, capable of performing original scholarly work, while considering real-world constraints and the impact their solution may have on society.
3. Graduates will give effective oral presentations in professional forums and write for professional audiences. Opportunities should be pursued to speak in front of a larger technical community and to contribute to the published literature in the discipline.

Mechanical Engineering (Ph.D.) Doctor of Philosophy. Major in Mechanical Engineering.

General Ph.D. requirements apply, along with departmental requirements as listed in the departmental graduate handbook. Preliminary screening of candidates and program planning for those admitted are essential features of the Ph.D. program. Early in the program, the student must complete a qualifying examination that will be oral and possibly written. The preliminary examination is taken after most of the course work is completed. This examination also includes a presentation of the dissertation progress or proposal. No foreign language is required; however, the department does require a satisfactory level of achievement in mathematics and numerical analyses and in computer programming.

Please see the Departmental Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIdaho-Responsive/Files/enr/academic-programs/me/handbooks/me-graduate-handbook.pdf?enr-pdf=graduate-student-handbookp6>) for details and program requirements on earning the Doctor of Philosophy in Mechanical Engineering degree.

1. Graduates will be able to perform independent, self-directed research studies and apply their knowledge and skills to solve advanced problems in mathematics, science, and engineering.
2. Graduates will be experienced researchers and designers, capable of making original contributions to the field while considering real-world constraints and the impact their solution may have on society. Products and processes developed through graduate student work should add value to others in the discipline.
3. Graduates will give effective oral presentations in research groups, classrooms, and professional forums.

Mechanical Engineering Minor

Code	Title	Hours
ENGR 210	Engineering Statics	3
ENGR 220	Engineering Dynamics	3
ME 123	Introduction to Mechanical Design (or equivalent introductory engineering/science course)	3
ME 223	Mechanical Design Analysis	3
Select 4 courses from the following:		12
ENGR 320 or ME 322	Engineering Thermodynamics and Heat Transfer Mechanical Engineering Thermodynamics	
ENGR 335	Engineering Fluid Mechanics	

ENGR 350	Engineering Mechanics of Materials
ME 301	Computer Aided Design Methods
ME 313	Dynamic Modeling of Engineering Systems
ME 330	Experimental Methods for Engineers
ME 410	Principles of Lean Manufacturing
MSE 201	Elements of Materials Science
Other technical electives as approved by the department chair	
Total Hours	24

Courses to total 24 credits for this minor

Department of Nuclear Engineering and Industrial Management Engineering Management Program

Indrajit Charit, Department Chair (208-757-5409
icharit@uidaho.edu); Denise Engebrecht, Program Manager
(208-364-6123 denisee@uidaho.edu); www.uidaho.edu/enr/em

This program is certified by the American Society for Engineering Management (<https://asem.org/>).

The Engineering Management Program at University of Idaho is designed for engineering professionals moving into technical management roles. The Program is multidisciplinary and supported by faculty in the colleges of engineering, business, and science. Students will explore the analytical, technical, and human resource aspects of managing in a technical environment. Students will have the opportunity to expand their knowledge in their chosen field of expertise. Since the vast majority of engineers assume management roles sometime during their career, this degree program is typically pursued on a part-time basis by working engineers. Classes are offered by resident and adjunct faculty in Idaho Falls, Boise, and Moscow. All courses required for the program are available for distance learners through the College of Engineering's Engineering Outreach Program (eo.uidaho.edu/ (<https://www.eo.uidaho.edu/>)).

The College of Engineering offers an M.Engr. (non-thesis) degree in Engineering Management. Admission to the program requires the ability to complete graduate-level work evidenced by undergraduate transcripts; a B.S. in Engineering from an ABET/EAC accredited program; a TOEFL score higher than 550 for International students; at least 2 years of engineering work experience beyond B.S. degree or currently employed as an engineer; and three letters of recommendation. One of the three letters of recommendation must be from a current or former employer. Students must also meet College of Graduate Studies minimum requirements for admission.

Industrial Technology Program

Indrajit Charit, Department Chair (208-757-5409
icharit@uidaho.edu); Debbie Caudle, Student Services Coordinator
(debrac@uidaho.edu); www.uidaho.edu/enr/programs/industrial-technology/bs (<http://www.uidaho.edu/enr/programs/industrial-technology/bs/>)

This program is accredited by the Association of Technology, Management and Applied Engineering (www.atmae.org).

The Industrial Technology Bachelor of Science degree program is designed to provide students with the opportunity to develop in-depth

knowledge and hands-on experience in basic and advanced industrial processes, procedures, planning, and management.

Nuclear Engineering Program

Indrajit Charit, Department Chair (208-757-5409
icharit@uidaho.edu); Alice Allen, Director of Recruitment and Student
Engagement, Idaho Falls (alicew@uidaho.edu); www.uidaho.edu/
idahofalls/nuclearengineering

The world's growing need for energy requires a diversity of energy sources, including nuclear energy. Approximately 20% of the electricity used in the U.S. stems from nuclear power. As power plants continue to age, there is a need to develop next-generation nuclear reactors and to educate future generations of nuclear scientists and engineers. The demand for nuclear engineers is projected to significantly outpace supply during the next decade.

The minimum requirements to enter any of the graduate programs in nuclear engineering are an undergraduate degree in engineering or a closely related field from an ABET accredited U.S. program (does not include technical degrees) and a cumulative GPA of 3.0 or better on a 4.0 scale. The GRE General Exam is recommended but not required for students with an undergraduate degree from a U.S. ABET accredited program. Some applicants who have a baccalaureate degree in a field other than engineering may be required to complete certain undergraduate deficiency courses before they will be allowed to take graduate level courses. Students must also meet College of Graduate Studies minimum requirements for admission. This program is available at the Idaho Falls campus only.

Technology Management Program

Indrajit Charit, Department Chair (208-757-5409
icharit@uidaho.edu); Alice Allen, Director of Recruitment and Student
Engagement, Idaho Falls (alicew@uidaho.edu); Denise Engebrecht,
Program Manager (denisee@uidaho.edu); www.uidaho.edu/engr/
programs/technology-management

Technology Management is a multidisciplinary field that prepares technical professionals to provide effective planning, selection, implementation, and management of technology to solve today's complex and challenging problems. This program bridges the gap between technology and business by equipping technologists with the expertise and leadership skills needed to advance their career in today's fast-paced world. Students will expand their breadth of knowledge beyond a specific technical field into management and business. Business knowledge, organization insights, and communication skills will be integrated with technical knowledge to develop proficient technical managers and leaders of projects, operations, organizations, and people.

Classes are offered by resident and adjunct faculty in Idaho Falls, Boise, and Moscow. Courses for the program are available at the centers and through distance education (online). Thesis and non-thesis options are available.

Students must have an accredited bachelor's degree in a technical field or an accredited bachelor's degree and a minimum of three years' work experience in a technical field. One of the letters of recommendation must be from a current or former employer. Students must also meet College of Graduate Studies minimum requirements for admission.

Majors

- Industrial Technology (B.S.Tech.) (p. 288)

Certificates

- Fire Safety Undergraduate Academic Certificate (p. 287)
- Human Safety Performance Undergraduate Academic Certificate (p. 288)

Nuclear Engineering and Industrial Technology Graduate Program

- Engineering Management (M.Engr.) (p. 287)
- Nuclear Engineering (M.Engr.) (p. 290)
- Nuclear Engineering (M.S.) (p. 290)
- Nuclear Engineering (Ph.D.) (p. 290)
- Technology Management (M.S.) (p. 292)

Certificates

- Critical Infrastructure Resilience Graduate Academic Certificate (p. 286)
- Emergency Planning and Management Graduate Academic Certificate (p. 287)
- Nuclear Criticality Safety Graduate Academic Certificate (p. 289)
- Nuclear Decommissioning and Used Fuel Management Graduate Academic Certificate (p. 290)
- Nuclear Technology Management Graduate Academic Certificate (p. 291)
- Nuclear Safeguards and Security Graduate Academic Certificate (p. 291)

Critical Infrastructure Resilience Graduate Academic Certificate

With the growing need for a highly skilled and well-versed cyber security workforce, especially in sectors of our nation's critical infrastructure, there is a need for guidance and recognition of accomplishment in graduate studies in this area from multiple disciplines. The Critical Infrastructure Graduate Certificate is offered in the Technology Management program. Masters students in TM, Computer Science, Electrical and Computer Engineering, or Nuclear Engineering, as well as non-degree-seeking professionals, will be eligible to earn this interdisciplinary certificate.

The first course listed is required. The remaining are electives that meet specific objectives. Group 1 of electives covers fundamentals of security and risk management. Students choose two of these courses. Group 2 of electives provides domain-specific engineering fundamentals of cyber-physical systems. Group 3 of electives provides computer security concepts and skills.

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
TM 517	Critical Infrastructure Security and Resilience Fundamentals	3
Select 6 credits of electives from the following:		6
CS 536	Advanced Information Assurance Concepts	
ECE 469	Resilient Control of Critical Infrastructure	

INDT 470	Homeland Security	
INDT 472	National Incident Management Systems	
TM 529	Risk Assessment	
TM 516	Nuclear Rules and Regulations	
Select 3 credits of electives from the following:		3
CHE 445	Digital Process Control	
CS 452	Real-Time Operating Systems	
ECE 340	Microcontrollers	
ECE 443	Distributed Processing and Control Networks	
ECE 444	Supervisory Control and Critical Infrastructure Systems	
ECE 470	Control Systems	
ECE 477	Digital Process Control	
INDT 333	Industrial Electronics and Control Systems	
ME 481	Control Systems	
TM 514	Nuclear Safety	
Select 3 credits of electives from the following:		3
CS 438	Network Security	
CS 439	Applied Security Concepts	
CS 447	Digital Forensics	
Total Hours		15

Courses to total 15 credits for this certificate

Emergency Planning and Management Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
INDT 472	National Incident Management Systems	3
TM 525	Emergency Management and Planning	3
TM 526	Community Emergency Planning	3
Select two courses from the following:		6
INDT 470	Homeland Security	
TM 533	Chemical Hazards	
TM 534	Biological Hazards	
Total Hours		15

Courses to total 15 credits for this certificate

Engineering Management (M.Engr.) Master of Engineering. Major in Engineering Management.

General M.Engr. requirements apply. The Engineering Management degree requires 30 credits; a minimum of 15 credits must be engineering courses. The degree program includes 15 credits of required courses (see below), and the rest are electives based on particular program requirements. Each student will design a study plan in consultation with the Engineering Management Student Advisor which is then approved by the Department Chair. Nearly all Engineering Management students

do not live in Moscow and are allowed to take classes from other universities, especially elective classes, as appropriate and following University of Idaho policy for transfer courses.

Exit Requirement for the EM Degree Program: All students are required to complete the exit requirement to earn the Master of Engineering in Engineering Management. Successfully completing the exit requirement is accomplished through one of the following options:

- Three (3) credits of qualitative elective will be satisfied by the student passing three (3) credits of EM 599 (Non-thesis Masters Research) and completing a non-thesis masters project following program requirements in effect at the time of registration. This option will include a presentation of the student's project to a committee, followed by a Final Defense typically based on the project and the student's coursework. Students must pass both the oral presentation and final defense. In total, through this option, students complete a minimum of 30 credits to earn the EM degree.
- In addition to the core 30-31 credit EM curriculum, students must pass an additional one-credit course, EM 596 (Capstone Integration), following program requirements in effect at the time of registration. Option 2 requires the student to complete a minimum of 31 credits to earn the EM degree. (2A)
 - In completing EM 596, students must pass the CPEM examination administered by the American Society for Engineering Management (ASEM) and become a Certified Professional in Engineering Management (CPEM). Students who do not meet the work experience requirement for the CPEM exam may choose to complete a comprehensive exam, prepared and administered by EM faculty, to satisfy EM 596.

Code	Title	Hours
Required Courses		15
ACCT 582	Enterprise Accounting	
EM 510	Engineering Management Fundamentals	
EM 513	Leading Technical Organizations	
STAT 431	Statistical Analysis	
EM 580	Technical Project Management	
Elective Credits		15
Total Hours		30

- Students will have demonstrated their ability to use process improvement approaches to improve operational excellence.
- Students will have demonstrated their mastery of Engineering Management through successfully passing the ASEM CPEM examination.
- Students will have demonstrated that they understand the functions of engineering management including planning, organization, leading, and controlling.

Fire Safety Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
INDT 408	Fire Safety Hazard Analysis	3
INDT 409	Fire Suppression Design and Detection	3

INDT 410	Loss Control	3
INDT 411	Fire and Life Safety Management	3
INDT 412	Engineering for Fire and Life Safety	3
INDT 413	Community Planning and Design for Fire Protection and Management	3
Total Hours		18

Courses to total 18 credits for this certificate

Human Safety Performance Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
INDT 362	Behavior Based Safety	3
INDT 464	Human Performance Fundamentals	3
INDT 466	Human Performance Field Investigation	3
INDT 462	Industrial Safety	3
or TM 528	Accident Investigation	
Total Hours		12

Courses to total 12 credits for this certificate

Industrial Technology (B.S.Tech.)

The Industrial Technology Bachelor of Science degree program¹ is designed to provide students with the opportunity to develop in-depth knowledge and hands-on experience in basic and advanced industrial processes, procedures, planning, and management.

To graduate in this program, all students are required to take the Certified Technology Manager (CTM) exam. Passing the CTM exam is not a requirement; students only need to show proof that they have taken the exam.

Required coursework includes the university requirements (regulation J-3 (p. 78)) and the following:

Code	Title	Hours
ENGL 317	Technical Writing II	3
PSYC 101	Introduction to Psychology	3
ECON 202	Principles of Microeconomics	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
MHR 311	Introduction to Management	3
ENGR 105	Engineering Graphics	2
INDT 310	Introduction to Industrial Technology	3

INDT 332	Introduction to Analog and Digital Electronics	3
INDT 333	Industrial Electronics and Control Systems	3
INDT 350	Introduction to Materials Science	3
INDT 353	Manufacturing Systems	3
INDT 362	Behavior Based Safety	3
INDT 415	Impact of Technology on Society	3
INDT 434	Power Generation and Distribution	3
INDT 435	Network Administration	3
INDT 442	Systems Integration	3
INDT 443	Government Contract Law	3
INDT 444	Quality Assurance Organization and Management	3
INDT 446	Labor Law	3
INDT 448	Project and Program Management	3
INDT 450	Comprehensive Exam Preparation	1
INDT 453	Computer Integrated and Robotics Manufacturing Technology	3
INDT 462	Industrial Safety	3
INDT 484	Industrial Technology Capstone I	3
INDT 485	Industrial Technology Capstone II	3
Select Technical and Free Electives (not limited to the following): ²		12
INDT 457	Lean to Green Sustainable Technology	
INDT 464	Human Performance Fundamentals	
INDT 466	Human Performance Field Investigation	
INDT 470	Homeland Security	
INDT 472	National Incident Management Systems	

Total Hours **100**

1

This degree is currently only available at the Idaho Falls and Coeur d'Alene Centers.

2

Elective credit can also be obtained through Technical Competency. Up to 24 credits can be obtained in this manner. Consult with your advisor for information on this process.

Courses to total 124 credits for this degree

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PSYC 101	Introduction to Psychology	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
Oral Communication Course		3
Hours	16	
Spring Term 1	Hours	
ECON 202	Principles of Microeconomics	3
ENGL 102	Writing and Rhetoric II	3
MATH 160	Survey of Calculus	4
or MATH 170	or Calculus I	
PHYS 112	General Physics II	3
PHYS 112L	General Physics II Lab	1
STAT 251	Statistical Methods	3
or STAT 301	or Probability and Statistics	
Hours	17	
Fall Term 2	Hours	
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1

ENGR 105	Engineering Graphics	2
INDT 310	Introduction to Industrial Technology	3
INDT 332	Introduction to Analog and Digital Electronics	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Spring Term 2		
INDT 333	Industrial Electronics and Control Systems	3
INDT 415	Impact of Technology on Society	3
INDT 462	Industrial Safety	3
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Hours		15
Fall Term 3		
ENGL 317	Technical Writing II	3
INDT 350	Introduction to Materials Science	3
INDT 362	Behavior Based Safety	3
INDT 434	Power Generation and Distribution	3
INDT 435	Network Administration	3
Hours		15
Spring Term 3		
INDT 353	Manufacturing Systems	3
INDT 442	Systems Integration	3
INDT 444	Quality Assurance Organization and Management	3
MHR 311	Introduction to Management	3
International Course		3
Hours		15
Fall Term 4		
INDT 443	Government Contract Law	3
INDT 448	Project and Program Management	3
INDT 484	Industrial Technology Capstone I	3
Technical, Major Elective Course		3
Technical, Major Elective Course		4
Hours		16
Spring Term 4		
INDT 446	Labor Law	3
INDT 450	Comprehensive Exam Preparation	1
INDT 453	Computer Integrated and Robotics Manufacturing Technology	3
INDT 485	Industrial Technology Capstone II	3
Technical, Major Elective Course		3
Technical, Major Elective Course		3
Hours		16
Total Hours		125

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates are prepared to design, implement, and improve processes and systems in the manufacturing, research, and development, service or government sectors. The students will be able to:
 - a. Apply theories and principles from mathematics, physical science, and computer applications and information technology to solve practical technology problems;
 - b. Apply quality, safety, and industrial technology skills in a professional work environment within real-world constraints;

- c. Demonstrate proficiency in the use of robotics and manufacturing equipment to solve practical technology and engineering problems;
 - d. Apply the principles of cognitive systems and human performance to perform task analyses and evaluate human-computer/machine interfaces;
 - e. Interpret, describe, and implement information contained in typical project specifications.
2. Our graduates are prepared to succeed in managerial and leadership positions. The students will be able to:
 - a. Demonstrate project management skills by applying time value of money, select and implement cost-effective solutions and understand cost-accounting and effective scheduling principles;
 - b. Develop, motivate, direct, and assist teams in applying critical thinking concepts to solve technology and engineering problems;
 - c. Identify customer project goals, financial needs, timeline constraints, and other customer service based efforts.
 3. Our graduates are prepared to communicate with team members, work in teams, customers, and suppliers in the global environment. The students will be able to:
 - a. Demonstrate good written and oral communication skills and use current multimedia tools to convey information;
 - b. Draw conclusions from and explain information synthesized from several sources;
 - c. Manage dispute resolution to mutually beneficial accord.
 4. Our graduates are prepared to engage in today's evolving market place. The students will be able to:
 - a. Analyze contemporary issues for pertinence and potential impacts;
 - b. Describe and evaluate professional and ethical responsibilities;
 - c. Demonstrate the ability to adapt emerging technologies;
 - d. Recognize and evaluate the impact of engineering decisions in a global and societal context;
 - e. Put into practice the concepts of service learning.

Nuclear Criticality Safety Graduate Academic Certificate

Students who wish to earn an academic certificate in Nuclear Criticality Safety have two possible tracks that can be used to complete this certificate: Track 1 is encouraged for students majoring in Nuclear Engineering or a closely related program, and Track 2 is encouraged for students majoring in Technology Management. Students interested in this academic certificate should contact the Director of Nuclear Engineering.

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Track 1

Code	Title	Hours
NE 450	Principles of Nuclear Engineering	3
NE 535	Nuclear Criticality Safety	3
NE Elective		3
Select one of the following:		3
NE 554	Radiation Detection and Shielding	

Upper-Division or Graduate level Mathematics course

Total Hours 12**Courses to total 12 credits for this certificate**

Track 2

Code	Title	Hours
TM 513	Nuclear Criticality Safety	3
TM 514	Nuclear Safety	3
TM 516	Nuclear Rules and Regulations	3
NE 450	Principles of Nuclear Engineering	3
Total Hours		12

Courses to total 12 credits for this certificate

Nuclear Decommissioning and Used Fuel Management Graduate Academic Certificate

Before pursuing this certificate, students must have completed NE 450 (Principles of Nuclear Engineering) or have previous professional nuclear experience (e.g., nuclear navy, commercial power plant).

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
NE 514	Nuclear Safety	3
NE 516	Nuclear Rules and Regulations	3
NE 554	Radiation Detection and Shielding	3
NE 587	Nuclear Decommissioning	3
Total Hours		12

Courses to total 12 credits for this certificate

Nuclear Engineering (M.Engr.) Master of Engineering. Major in Nuclear Engineering.

General M.Engr. requirements apply.

Please see the Departmental Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/idaho-falls/ne/ne-graduate-student-handbook.pdf?la=en&hash=EB023E4E26205D7B60871BB3958E305895DD9910>) for details and program requirements on earning the Master of Engineering in Nuclear Engineering degree.

1. Students will communicate professionally and effectively in written and oral presentations to a technical audience.
2. Students will be able to identify and analyze engineering problems through multi-disciplinary approaches as collaborative problem solvers who can synthesize and apply advanced mathematics, science, and engineering.
3. Students will be effective nuclear engineers capable of utilizing existing research as the basis for making sound decisions to carry an engineering project through the conceptual, design, and

implementation phases and perform original scholarly work that considers the impact of the application of both new and existing research on society.

4. Students will demonstrate awareness of the global nature of the practice of nuclear engineering and be responsible for the role that they play in enhancing the quality of life of the global community while continually striving for an openness to lifelong learning.
5. Students will act in a collegial manner, striving to add value to learning experiences, to project teams, and to the larger organization in which they work. They should be very aware of safety and environmental impacts caused by actions taken. They should be able to use resources wisely and responsibly.

Nuclear Engineering (M.S.) Master of Science. Major in Nuclear Engineering.

General M.S. requirements apply.

Please see the Departmental Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/idaho-falls/ne/ne-graduate-student-handbook.pdf?la=en&hash=EB023E4E26205D7B60871BB3958E305895DD9910>) for details and program requirements on earning the Master of Science in Nuclear Engineering degree.

1. Students will communicate professionally and effectively in written and oral presentations to a technical audience.
2. Students will be able to identify and analyze engineering problems through multi-disciplinary approaches as collaborative problem solvers who can synthesize and apply advanced mathematics, science, and engineering.
3. Students will be effective nuclear engineers capable of utilizing existing research as the basis for making sound decisions to carry an engineering project through the conceptual, design, and implementation phases and perform original scholarly work that considers the impact of the application of both new and existing research on society.
4. Students will demonstrate awareness of the global nature of the practice of nuclear engineering and be responsible for the role that they play in enhancing the quality of life of the global community while continually striving for an openness to lifelong learning.
5. Students will act in a collegial manner, striving to add value to learning experiences, to project teams, and to the larger organization in which they work. They should be very aware of safety and environmental impacts caused by actions taken. They should be able to use resources wisely and responsibly.

Nuclear Engineering (Ph.D.) Doctor of Philosophy. Major in Nuclear Engineering.

General Ph.D. requirements apply. Preliminary screening of candidates and program planning for those admitted are essential features of the Ph.D. program. Early in the program, the student must complete a qualifying examination, which will be oral and possibly written. The preliminary examination is taken after most of the course work is completed. This examination is generally limited to the areas of emphasis indicated by the student's dissertation topic and includes a presentation

of the dissertation proposal; it will be written and oral. No foreign language is required; however, the program does require a satisfactory level of achievement in mathematics and numerical analyses and in computer programming.

Please see the Departmental Graduate Student Handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/idaho-falls/ne/ne-graduate-student-handbook.pdf?la=en&hash=EB023E4E26205D7B60871BB3958E305895DD9910>) for details and program requirements on earning the Doctor of Philosophy in Nuclear Engineering degree.

1. Students will be effective nuclear engineers capable of utilizing existing research as the basis for making sound decisions to carry an engineering project from through the conceptual, design, and implementation phases and perform original scholarly work that considers the impact of the application of both new and existing research on society.
2. Students will act in a collegial manner, striving to add value to learning experiences, to project teams, and to the larger organization in which they work. They should be very aware of safety and environmental impacts caused by actions taken. They should be able to use resources wisely and responsibly.

Nuclear Safeguards and Security Graduate Academic Certificate

This fully online graduate certificate is not intended to modify or replace any existing program, and instead will offer students the opportunity to focus their education on a growing workforce need within the United States. The certificate will be tied to the Nuclear Engineering and Industrial Management Department at the University of Idaho (UI), the Nuclear Engineering Department at Idaho State University (ISU), and the School of Public Policy at Boise State University (BSU). All courses are asynchronous and online, and will be available through Online Idaho.

Code	Title	Hours
NE 513	Nuclear Security Science	3
BSU Coursework		6
	PUBADM 555 Security Regulation & Policy for Nuclear, Radiation & Cyber-related Risk	
	CS 581 Cyber Security for the Nuclear Industry	
ISU Coursework		3
	NE 4488/5588 Nonproliferation and Safeguards	
Total Hours		12

Courses to total 12 credits for this certificate

Course Title and Descriptions:

ISU - NE 4488 / 5588, Nonproliferation and Nuclear Safeguards (3 credits lecture); Offered every other Spring in even years (Spring 2024)

Course Description: <https://coursecat.isu.edu/graduate/allcourses/ne/> (https://urldefense.com/v3/__https://coursecat.isu.edu/graduate/allcourses/ne/_;!!JYXjzlvb!mtGPhnZCNL-oFD3HpKPN4GjfmqPQp1e2WbzTCeYQDfICI2p1129X1375BlvJFFOE0ZXSZz8-10pZqKs_S/)

Note: BSU links for courses below will updated when available late spring 2023.

BSU - PUBADM 555 Security Regulation and Policy for Nuclear, Radiation and Cyber-related Risk (3 credits lecture); Offered every other Spring in odd years (Spring 2025)

Course Description: This regulation and policy course examines nuclear-radiation security, including cyber-nuclear risk, with an emphasis on the civilian sector. Topics cover: historical developments and relationships across nuclear security, safety and safeguards; national and international legal frameworks; organizations; transport and import/export; cooperation; culture and management.

BSU - CS581 Cybersecurity for Nuclear Industry (3 credits lecture); Offered every other Fall in even years (Fall 2024)

Course Description: A balance of theoretical and practical knowledge of cyber and information security as it pertains to computing, networking, and electronic communication systems for the nuclear industry. Practical exercises (sometimes in teams) support the theoretical content of the lectures. Examples will be drawn from the nuclear industry.

UI - NE 513 Nuclear Security Science (3 credits lecture); Offered every other Fall in odd years (Fall 2023)

Course Description: An engineering course on threat and risk informed nuclear security covering topics including: physical protection, facility characterization, consequence analysis, access control/delay, insider threats, security culture, transportation security, radiological crime scene, and nuclear forensics. PRE-or-COREQ: BS in Science or Engineering or permission of instructor.

Specific learning outcomes for each course are identified in the attached course syllabi.

Nuclear Technology Management Graduate Academic Certificate

This certificate consists of 18 credits and requires six 3-credits courses.

The courses should be taken in conjunction with the Technology Management M.S. or the Nuclear Engineering M.S.

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
INDT 434	Power Generation and Distribution	3
NE 527/TM 537	Nuclear Material Storage, Transportation, and Disposal	3
NE 528/TM 538	Management of Nuclear Facilities	3
TM 514	Nuclear Safety	3
TM 516	Nuclear Rules and Regulations	3
Select one required course for TM/NE:		3
NE 450	Principles of Nuclear Engineering (required for TM majors)	
TM 520	Leadership and Conflict Resolution in a Technological Environment (required for NE majors)	
Total Hours		18

Courses to total 18 credits for this certificate

Technology Management (M.S.) Master of Science. Major in Technology Management.

Master's degree candidates must fulfill the requirements of the College of Graduate Studies and of the College of Engineering. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

1. Use data-driven management and leadership capabilities to solve problems in a complex, technical environment.
2. Through independent learning and collaborative study, attain and use knowledge in finance, statistics, technology, and business to enable business performance improvement across multiple functional areas of an organization.

College of Graduate Studies

Jerry R. McMurtry, Dean (104 Morrill Hall; 208-885-6243).

The College of Graduate Studies was formally organized in 1925 (then designated as the Graduate School), but the university has awarded advanced degrees since 1897. The College of Graduate Studies encompasses all graduate programs of the university but does not supervise programs in the College of Law. This coverage of all regular disciplines and professional fields provides a wide variety of academic programs. Enrollments are large enough to make possible the vital interchange of ideas among students and between students and faculty that is necessary for graduate programs, yet enrollments are sufficiently small to permit close faculty-student relationships. Interdepartmental cooperation is an important factor on the Idaho campuses. The University is the chief research center for the state and as such operates active graduate programs in most areas providing a broad research base upon which graduate programs have been built.

Graduate Council

The Graduate Council is the representative body of and is empowered to act for the Graduate Faculty. It is responsible to and reports to the Graduate Faculty, which retains the authority to review actions of the council. Its function is to promote graduate instruction and research, formulate policies and long-range plans for the graduate programs, and review and act on student appeals and petitions that involve exceptions to accepted regulations and procedures of the College of Graduate Studies.

The Graduate Council is constituted of one member elected by and from the constituent graduate faculty of each of the colleges that offer programs leading to graduate degrees (except the J.D. degree); four members of the Graduate Faculty appointed by the president of the university; two graduate students; the dean of the College of Graduate Studies, who serves as chair; and the assistant or associate dean of the College of Graduate Studies, who serves as vice chair.

Undergraduate Enrollment in the College of Graduate Studies

A senior (90 or more credits) who has a cumulative grade-point average of 3.00 or higher may register for courses at the 500-level. Graduate courses taken as an undergraduate student will automatically be recorded on the undergraduate transcript. Students desiring to have

graduate level courses taken as an undergraduate placed on a graduate transcript must follow the policies on reserving courses for the graduate transcript. If the credit reservation form is approved, a separate graduate transcript will be created for the student. Capable students who are in their senior year can thus begin limited graduate work at an earlier date than would otherwise be possible.

Reserving Undergraduate Courses for the Graduate Transcript

Students desiring to move courses from their undergraduate transcript to a graduate transcript may do so by filing the Credit Reservation Form with the College of Graduate Studies. Courses from the undergraduate record may be moved to a graduate transcript if they meet the following criteria: 1) the student has a cumulative GPA of 3.00 or greater, 2) the course is at the 400 level or higher, 3) the grade in the course is A or B, and 4) the course was not used to meet the requirements for the undergraduate degree. No more than 12 credits of undergraduate work can be moved to the graduate transcript under this policy.

Students are responsible to initiate the course reservation process as soon as they know they wish to move a course to the graduate level and prior to receiving their baccalaureate degree. No courses will be moved to the graduate transcript once the baccalaureate degree has been conferred. Undergraduate courses completed at another institution are not eligible to be reserved. Courses will not be reserved until final grades for the term have been posted. Students who have courses placed on a graduate transcript and later wish to be admitted to the College of Graduate Studies for work toward an advanced degree must apply for admission to the College of Graduate Studies following the usual procedures. All courses placed on the graduate transcript, regardless of course level, will be assessed graduate fees.

Non-Degree Enrollment in the College of Graduate Studies

A non-degree student may register for graduate level courses if they have earned an undergraduate or graduate degree with a cumulative grade point average of 3.00 or higher. Students desiring to register in graduate-level courses should send a copy of their transcript showing degree date and GPA to the College of Graduate Studies (cogs-forms@uidaho.edu) to have the block on 500-level courses removed. Students desiring to have graduate-level courses taken as a non-degree student placed on a graduate transcript must follow the policies on reserving courses for the graduate transcript.

Reserving Non-Degree Courses for the Graduate Transcript

Students desiring to move courses from their non-degree transcript to a graduate transcript may do so by filing the Credit Reservation Form with the College of Graduate Studies. Courses from the non-degree record may be moved to a graduate transcript if they meet the following criteria: 1) the student has a cumulative GPA of 3.00 or greater; 2) the course is at the 400-level or higher; and 3) the grade in the course is 'A', 'B', or 'Pass'. No more than 12 credits of non-degree work can be moved to the graduate transcript under this policy. The combined total of transfer credits, correspondence credits, non-degree credits, credits moved from an undergraduate transcript that were not used toward an undergraduate degree, and approved credits more than eight years old at the time the degree is awarded shall not exceed 12 credits for master's programs designated as requiring 36 or fewer credits, and they shall not exceed

one-third of the total credits in designated programs requiring more than 36 credits.

Students are responsible to initiate the course reservation process as soon as they enter a graduate program. Courses will not be reserved until final grades for the term have been posted. All courses placed on the graduate transcript, regardless of course level, will be assessed graduate fees.

General Graduate Regulations

The regulations described in this section are the minimum standards established by the faculty of the College of Graduate Studies. Graduate programs may establish additional regulations, including additional residence requirements, above the minimums set by the College of Graduate Studies.

Student Responsibilities

The student is responsible for complying with all rules, procedures, and time limits as established by the graduate faculty.

Appointment of Major Professor and Committee for All Degree Seeking Graduate Students

All major professors must be member of the UI Graduate Faculty and have an appointment in the program in which the student is enrolled. It is the students' responsibility to identify and select their major professor.

Co-major professors are allowed in certain circumstances and must have earned a degree equal to or higher than the degree being sought by the student. Co-major professors must be approved by the dean of the College of Graduate Studies. Circumstances where a co-major professor is appropriate are as follows:

- Senior faculty member mentoring a junior or new faculty member,
- Non-teaching research faculty with recognized research or creative activities necessary for the completion of the students' dissertation or thesis,
- UI faculty employed via a cooperative agreement with state or federal agencies,
- Emeritus faculty with expertise in the students' field of study, or
- When interdisciplinary research is being conducted.

All master's degree-seeking graduate students are required to formally appoint a major professor by using the Appointment of Major Professor form within the first year following enrollment in the program. (For the M.F.A. program, within three semesters of registration, the student and the departmental administrator or graduate coordinator nominates the major professor.) For non-thesis master's and specialist degrees, students are strongly encouraged to select or be assigned a major professor no later than the end of the first semester, and it is required by the end of the first year. It is important to note that the Interdisciplinary Studies master's degree requires at least four members on a student's committee, whether the student is thesis or non-thesis. A committee will consist of at least one member from each of the two principal disciplines involved in the student's program, one from a supporting discipline, and one member recommended to or appointed by the College of Graduate Studies.

Doctoral students are required to select a major professor no later than the end of the third semester in the program.

The committee, if required, is recommended by the major professor and the student and approved by the graduate program's administrator and

the dean of the College of Graduate Studies. At least one-half of the members of the committee must be members of the UI Graduate Faculty. A faculty member may not serve on a committee for a student who is seeking a degree higher than the faculty member has attained. (For the M.F.A. program, the committee consists at least of the major professor, a second faculty member from the major field and a member from a discipline outside the major department's discipline(s).)

Periodically, a qualified person with a particular expertise is requested to serve on a student's committee on a one-time appointment. The person must have written approval from the dean of the College of Graduate Studies in advance of the individual's committee participation. Should the person be recommended for multiple committees, they would need to be approved as an adjunct or affiliate faculty member and, therefore, would then be considered an associated faculty member of the program. It is the intent of the Graduate Council that this privilege be used sparingly and only when the situation indicates its necessity.

Removal of Faculty from a Committee

A faculty member can be removed as a major professor or a committee member if it is determined that continued membership is not in the best interest of the graduate program or the student. Such a request would be initiated by the student and advanced only if the remaining committee supports such request. The determination of action will be made through deliberation between the program's dean and the dean of the College of Graduate Studies. This policy is not designed to question or remove a faculty's inherent right to minority opinion regarding research or academic standards.

A faculty member who has separated from the university, other than those with emeriti status, must be replaced as the major professor or a committee member on all of their student committees.

Exceptions to the above policy must be approved in advance of committee participation and in writing by the dean of the College of Graduate Studies. Reasons for considering an exception could include, but are not limited to, the anticipated completion date of the student and/or if the student is better served without committee disruption, if the separated faculty member becomes adjunct faculty, or if there are intellectual property issues to be considered.

Qualifying Examination

If such an examination is required, it is conducted according to the program's procedures and is a prerequisite to the preparation of a study plan. A report of this examination is not submitted to the College of Graduate Studies.

Graduate Reviews for the M.F.A

Graduate reviews are conducted by department graduate faculty members. The initial graduate review is conducted in the first semester of registration and serves to assess the background of the student in both major and supporting fields and to provide in part the basis for the preparation of the student's study plan. The remaining reviews are used to assess growth and the ability to complete the program.

Preparation and Submission of Study Plan

Early in the student's academic career, the student prepares in conference with the major professor (and committee, if required by department) a study plan outlining all course work to be completed to fulfill the requirements for the degree. Normally, the study plan will include some work to be taken outside of the major department. The study plan is submitted for the approval by the student's major professor, the program

administrator, and the dean of the College of Graduate Studies. Any subsequent changes in the study plan must receive the same approvals.

All degree-seeking graduate students must have a study plan on file with the College of Graduate Studies. Study plans cannot be processed without an assigned major professor. All master's and specialist degree-seeking students are required to file a study plan with the College of Graduate Studies by the end of the first year of attendance. (For the M.F.A. program, students must prepare a study plan within two semesters of registration (or two summer sessions for those attending in the summer only).) Doctoral degree-seeking students are required to file a study plan with the College of Graduate Studies by the end of the third semester in the program.

Research Approval

Prior to beginning any research projects, approval must be granted by one or more of the following groups, if it applies to the research that is being conducted: the Institutional Review Board (IRB) for research involving human subjects; the Institutional Animal Care and Use Committee (IACUC) for research using vertebrate animals; the Institutional Biosafety Committee (IBC) for research using any biological agents or recombinant DNA; the Idaho Research Foundation for research that has the possibility of patent or license outputs; the University Research Office for research involving agents or federal controls on the development, use and distribution of technology; or the Office of Sponsored Programs for activities funded through external grants and contracts. Should the research methodology or source of funding change, the appropriate group must be notified.

Petitions

Students and major professors are advised that the right of petition exists to waive or modify some university regulations. University academic petitions (see Academic Appeals Process (p. 71)) request waiver or modification of university regulations. The College of Graduate Studies' petitions request waiver or modification of regulations in this section. Favorable action can be expected only when circumstances and the presentation clearly justify an exception. Precedents are not set by previous actions and may not form the basis of a petition; rather, the situation concerning the student involved is given consideration on an individual basis. An appeal of the decision made by the College of Graduate Studies petitions committee can be requested through Graduate Council. Further appeals may be made to the Provost's Office.

Once a College of Graduate Studies petition is submitted, the Dean or Associate Dean may act on or, in certain cases, will appoint a committee to hear the petition. The committee will consist of current Graduate Council members when possible. The committee will review materials specifically related to the petition from both the student and the College of Graduate Studies. The student's presence is not required, and additional information may be requested by the committee. The committee's recommendation of action is then forwarded to the Graduate Council for review. The Graduate Council will decide to support or reject the committee's recommendation and render a decision on the petition. The Graduate Council may request a hearing to review all of the information related to the petition. The final decision of the Graduate Council may be appealed to the Provost (See Faculty Staff Handbook 2500).

A fee is charged for each petition submitted to the Academic Petitions Committee or College of Graduate Studies.

Provisional Admission

Provisional admission is available to students who are academically eligible but lack departmental requirements or are deficient in coursework necessary for full admission to the program. The program is responsible to track the provisions and communicate with the College of Graduate Studies when the student meets the conditions. The conditions specified for a student's advancement to regular admission are established at the time of their acceptance and must not be changed (i.e., either strengthened or relaxed) thereafter.

A student who is not eligible for regular admission may be considered for provisional admission (at the master's level only) if approved by the Director of Graduate Studies and there is evidence for success in graduate-level work as demonstrated by one of the following:

1. The student's undergraduate GPA shows satisfactory improvement,
2. The student has taken post-baccalaureate coursework with 'A' and/or 'B' grades,
3. The student has relevant post-baccalaureate work experience and/or has been working for at least one year in the field of the proposed graduate major, or
4. The student has a letter of support from a faculty member in the discipline who is willing to serve as the student's major professor.

Provisional admission is not available to international students who hold non-resident alien visas or students who are to be appointed to assistantships.

A student may not remain in provisional enrollment status for more than one academic year or after the completion of 9 credits.

A student will be advanced to regular admission status provided they maintain a GPA of at least 3.00 each semester (a higher GPA may be specified), fulfill the conditions that were specified at the time of initial enrollment, and receive no grades of incomplete.

A student who does not meet the stated requirements for advancement cannot continue in the College of Graduate Studies or enroll in 500-level courses and is subject to normal disqualification and reinstatement procedures. It is the student's responsibility to be in touch with the administrative unit regarding their progress toward meeting the conditions for regular admission.

Academic units need not require a student to make up ALL of their academic deficiencies while in provisional enrollment. Performance on a limited selection of courses should suffice to demonstrate whether or not the student has the ability to do satisfactory graduate work. Remaining deficiencies, if any, can be made up after the student has been regularly admitted. The academic unit must be sure that any courses the student is required to take while provisionally admitted will, in fact, be offered during that period.

Registration and Enrollment Requirements

Graduate students engaged in **ANY** activity requiring faculty or staff time and consultation or the use of any UI facilities must register for the number of credits appropriate to the degree of activity involved during the semester of activity. Such activity includes, but is not limited to, writing, defending, or submitting a thesis or dissertation; research; working on or completion of a non-thesis requirement; or taking a preliminary examination. A student who was appropriately registered during a previous term and who did not complete all the requirements by the end

of that term, but does so before the official opening date of the new term, is awarded the degree at the end of the following term without further registration.

Continuous Registration

Students admitted to a graduate program at the University of Idaho are required to be continuously registered in the Fall and Spring semester through their degree programs. GRAD 710 Continuous Enrollment is a special course for which graduate students may register in place of credit-bearing courses any semester they are not attending the University of Idaho in order to remain admitted to their degree program. Students may request a Leave of Absence for a situation which temporarily will not allow them to continue in their program. A student may petition for a Leave of Absence for up to one year. Leave of Absence petitions are submitted to the College of Graduate Studies.

To meet the continuous enrollment requirement, students may register for any academic credit-bearing course(s) or in a Continuous Enrollment course. Continuous Enrollment registration carries a reduced fee, which is 25% of the cost of a regular academic credit. Registration in a Continuous Enrollment course does not carry academic credit and therefore does not defer student loans.

Registration in a Continuous Enrollment course does maintain graduate student status and allows for the purchase of student health insurance (SHIP). Contact the SHIP office for details on enrollment while in continuous registration status. Registration in a Continuous Enrollment course allows the student access to the library, laboratory, campus computer services, etc., but it does not allow students access to any campus function or activity which is paid for by student fees (e.g., Rec Center). TA and RA positions are not available to students who are registered in a Continuous Enrollment course.

Students who do not maintain continuous enrollment by registering for regular courses or a Continuous Enrollment course will be required to apply for re-enrollment into their previous academic program. If a student does not enroll in either regular coursework or a Continuous Enrollment course for two consecutive terms (excluding Summer), they will be required to apply for re-admission to their previous graduate program if they wish to continue their studies. Re-admission and re-enrollment decisions are made at the program level and forwarded to the College of Graduate Studies. Students are allowed a maximum of two consecutive semesters of Continuous Enrollment course registration. Beyond two semesters, the student must register for regular credit-bearing courses or petition for a Leave of Absence through the College of Graduate Studies. Students who wish to register for a Continuous Enrollment course must follow the same procedures and rules that apply to regular registration.

Graduate Finishing Status

It is expected that all graduate students using university facilities or faculty time be registered in an appropriate number of credits that reflect the amount of effort expected by the student and the faculty. Master's degree candidates who have completed their study plan and doctoral degree candidates who have completed their study plan and passed their preliminary examination, but have yet to finish their research/project/performance, may register in the GRAD 720 Finishing Status course. Finishing Status registration carries a reduced fee, which is 25% of the cost of a regular academic credit. Students can register for a Finishing Status course for up to two semesters. Beyond two semesters, the Finishing Status course is not available, and the student must register for at least one credit of regular course work per term through graduation. Graduate degree candidates must be either enrolled for at least one

regular academic credit or must register in a Finishing Status course during the term (Fall, Spring, or Summer) they will complete their degree requirements.

Registration in a Finishing Status course does not carry academic credit and therefore does not defer student loans. International students may register after prior approval from the International Programs Office.

Registration in a Finishing Status course does maintain graduate student status and allows for the purchase of student health insurance (SHIP). Contact the SHIP office for details on enrollment while in graduate finishing status. Registration in a Finishing Status course allows the student access to the library, laboratory, campus computer services, etc., but it does not allow students access to any campus function or activity which is paid for by student fees (e.g., Campus Rec). TA and RA positions are not available to students registering in a Finishing Status course.

Students who wish to register for a Finishing Status course must follow the same procedures and rules that apply to regular registration.

Change of Program

A student is admitted for work in a specified program and may not change without approval of the new program's administrator. Such procedure is formalized by a Change of Curriculum form signed by the chair of the program the student is leaving and the chair of the program in which the student wishes to enroll. The form must be approved by the dean of the College of Graduate Studies before it is forwarded to the Registrar's Office.

Credit Requirements for Full Time Students

A graduate student is considered full time academically when registered for 9 or more credits in the Fall or Spring term and 6 credits during the Summer term.

Regular Semester or Summer Session

The credit limit for a graduate student is 16 credits per semester or summer session (excluding courses taken for audit). With approval from the Associate Dean and a Change of Registration form, a student may enroll in up to 22 credits in the fall and spring semesters and 18 credits in the summer session.

Correspondence Courses

Credits earned in University of Idaho correspondence courses are applied to a graduate program only with the prior written approval of the dean of the College of Graduate Studies. Subject to approval by the appropriate program's administrator, correspondence credits from other institutions that are accepted for graduate credit by that institution may be accepted toward degree requirements. Grades earned in correspondence courses are not calculated into the student's GPA.

Probation, Disqualification, and Reinstatement

Graduate students remain in good standing if the semester GPA and the cumulative GPA are 3.00 or higher. A graduate student is placed on academic probation after any semester or summer session in which a GPA of less than 3.00 is earned in courses placed on the graduate transcript, regardless of the student's cumulative GPA. Students on academic probation who attain a semester GPA of 3.00 or higher during the next or subsequent semester or summer session after being placed on probation, but whose cumulative GPA is still below a 3.00, will remain on academic probation until the cumulative GPA is a 3.00 or higher.

The student will be disqualified if a semester GPA of less than 3.00 (regardless of cumulative GPA) is earned on courses placed on the graduate transcript during the second consecutive semester or summer session in which regular grades of 'A', 'B', 'C', 'D', or 'F' are received.

A graduate student may be reinstated after disqualification under the following conditions: 1) the student may not enroll as a graduate student for at least one semester (Fall or Spring), 2) they must have a major professor and approved study plan, 3) they must get the positive recommendation of their department chair/program director and major professor, and 4) they must get permission from the College of Graduate Studies. Reinstatement is granted for a specific semester only. The student must receive at least a 3.00 GPA the first semester back in the College of Graduate Studies. If a student does not register for that semester, they must again seek College of Graduate Studies permission for reinstatement. A student will remain on probation as long as the cumulative GPA is below a 3.00.

Grade Requirements

In order to be eligible for graduation, a candidate for an advanced degree must have a cumulative GPA, based on all grades on their graduate transcript, of at least 3.00 (A = 4.00) and at least a 3.0 overall GPA across all courses listed on the approved study plan. The relevant GPA is calculated as stated in regulation E. Courses in which grades of D or F are received may not be counted toward the satisfaction of degree requirements; however, those grades are included in the GPA.

Deficiencies

Courses that are needed to provide background for the student's program may be taken for audit or under the pass/fail option unless the program advises otherwise. See rules for the pass/fail option under regulation B-11. When deficiency courses are taken for regular credit, the resulting grade will be included in the computation of the GPA.

Foreign Language

There is no College of Graduate Studies foreign language requirement for a graduate degree; however, some programs require a language examination or special course work.

Catalog Issue

The pertinent requirements for graduate degrees are those contained in the most recent UI catalog issue that was in effect at the time of, or subsequent to, the candidate's admission into a specific graduate program as a degree-seeking student. A catalog issue is valid for a maximum of seven years from its effective date. The effective date of a catalog issue is the first Monday following spring graduation.

Application for Advanced Degree

The Application for Advanced Degree is submitted electronically by the student to the College of Graduate Studies, via VandalWeb, according to the deadline outlined in the academic calendar. In order for a student to apply for an advanced degree, a study plan must be posted by the Registrar's Office. Graduation applications are term specific. To change a graduation semester, the current application must be canceled and the student must re-apply for a subsequent term by the deadline.

Non-thesis Requirement (Non-thesis Master's and Specialist Degrees)

This exit requirement (an examination, presentation, portfolio, recital, project, or any requirement other than a thesis) is completed by non-thesis master's and specialist students after the completion of most

or all of the degree requirements. The program establishes the format and time frame and reports the results of the non-thesis requirement to the College of Graduate Studies using the Non-Thesis Report form. The exit requirement, if failed, may be repeated once with the program's approval. The interval before the second attempt may not be less than three months or longer than one year. No more than 2 credits may be used for completing the exit requirement or may be used toward the degree. If a student fails the exit requirement twice, the program does not allow the student to repeat the exit requirement after the first failure, or the student does not retake the exit requirement within a year, the student is automatically moved to unclassified enrollment status and is no longer in the degree program.

Final Defense (Master's thesis, Ph.D., Ed.D., and D.A.T. Degrees)

The final defense must be completed three weeks prior to the last day of the term in which the student plans to graduate. Before the final defense, the "Request to Proceed with Final Defense" form (see www.uidaho.edu/cogs/forms (<http://www.uidaho.edu/cogs/forms/>)) must be submitted to the College of Graduate Studies. Ph.D., Ed.D., and D.A.T. students are required to submit the form at least 10 working days prior to the defense. Thesis students must have the form submitted at least one day prior to the defense. The defense is usually oral, but part may be written. The candidate is required to defend their work and show a satisfactory knowledge of the program and supporting fields. A majority vote of the committee is necessary for a candidate to pass this defense. The defense, if failed, may be repeated once with the program's approval. The interval before the second attempt may not be less than three months or longer than one year.

Following a successful defense of their thesis, the candidate must submit the final electronic version into ETD/Proquest and the final signed bond paper copy to the College of Graduate Studies within six months; otherwise, the candidate must defend the thesis again and may be required to revise it or write an entirely new one. If a student fails the final defense twice, the program does not allow the student to repeat the defense after the first failure, or the student does not repeat the defense within a year, the student is automatically moved to unclassified enrollment status and is no longer in the degree program.

Theses and Dissertations

Definition of a Dissertation

A dissertation documents a student's original research, which significantly advances knowledge in a discipline. It provides evidence of leadership in scholarship and demonstrates a student's ability to think critically and independently. Students publicly defend their dissertations, which are then evaluated by the dissertation committee. Dissertations are made publicly accessible per the College of Graduate Studies guidelines.

Independent Work and Collaboration in Dissertation

A dissertation can be the outcome of independent or collaborative research. If submitting collaborative work through multi-authored articles in the dissertation, the student must demonstrate primary responsibility and authorship of the dissertation, and include a clear statement of the student's specific contribution to the collaborative work. This contribution statement must be approved by the dissertation committee and included in the front matter of the final product. The contribution statement should clearly and specifically articulate the attributions of any co-authors included in the dissertation articles.

The expectation is that the student played a significant role in most, if not all, aspects of the dissertation, demonstrating contributions to critical components of the project as appropriate for their field of study (e.g. project design, data generation and collection, analysis, etc.)

Defense of Dissertation

To be awarded a Ph.D. or an Ed.D., a student must have a public presentation and defense of their work, and they must pass the defense. The specifics of the defense process will be determined by their home department(s).

Thesis and Non-Thesis Statements

University of Idaho students pursuing a Master's degree will follow a Thesis or Non-Thesis Track that parallels expectations in their specific field. In this pursuit for further knowledge and experience, students should be independently driven in their research focus while still working with the committee to frame their professional approach. This may be done through research proposals, project outlines, competency exams, presentations, performances, or other suitable projects determined by the student with approval by the committee. It is the student's responsibility to form strong interconnections between their research focus and their final presentation(s) of this work in order to fulfill degree requirements within each degree program.

Definition of a Thesis

A thesis communicates a student's original research results and is a published record of their research. The thesis is prepared and publicly defended by the student to be evaluated by the major professor and committee. The thesis demonstrates a student's ability to think critically and independently about a topic approved by their major professor.

Independent Work and Collaboration in Thesis

Please see discussion of Independent Work and Collaboration in Dissertation (see above). As stated for a dissertation, thesis students must also provide a contribution statement that clarifies the significant role and contribution in the research process.

Defense of Thesis

To be awarded an M.F.A. (terminal), M.S. or M.A., a student must complete a public presentation and defense of their work, and they must pass the defense. The specifics of the defense process are established by the major professor and committee within the guidelines of COGS.

Definition of a Non-Thesis

To be awarded an M.F.A. (terminal), M.S. or M.A. and for specific specialist and professional degrees, a final examination, portfolio, recital, performance, project, and/or presentation significant to a program's requirements is completed by non-thesis master's degree students. Each degree program has established expectations for fulfillment of the degree.

Satisfactory Academic Progress and Performance

Enrollment in the College of Graduate Studies allows students to continue graduate study and research through the University of Idaho only as long as they maintain satisfactory academic standing and are maintaining satisfactory progress and performance toward completion of their graduate degree program. See section L (p. 92) – Academic Standing, Probation, Disqualification, and Reinstatement

Satisfactory academic standing is defined under the rules of probation, disqualification, and provisional admission and may or may not have an effect on the use of this policy.

Programs are encouraged to have a written policy distributed to all students that states the standards for satisfactory progress and performance. Examples of the program's requirements that may be used to measure progress or performance toward the degree are, but not limited to, the timely completion of required coursework, filing of appropriate paperwork, and/or attendance at seminars or other professional activities as well as failure to complete the annual review process, the program's qualifying, preliminary or other examinations and/or using acceptable safety or security standards in performance of duties.

Annual Review

The annual review process is initiated by the student and completed by the major professor using the Annual Evaluation and Performance Report (<http://www.uidaho.edu/cogs/forms> (<http://www.uidaho.edu/cogs/forms/>)) provided by the College of Graduate Studies. If a major professor has not been appointed, the program's administrator will conduct the review. When completed, the reviewer will recommend that the student continue in the program, receive a warning, or be dismissed from the program.

- **Warning:** Should a warning be given, the student must be informed in writing of the concern, the current program policy, the length of the warning period, and expectations that must be met to be removed from a warning status. The Associate Dean of the College of Graduate Studies is notified of this action. An appeal of a recommendation for a warning may be made to the Dean of the College of Graduate Studies.
- **Dismissal:** If dismissal is recommended, it may or may not be preceded by a warning period. If dismissal is recommended, the program's administrator forwards the recommendation and documentation to the Associate Dean of the College of Graduate Studies. The Dean of the College of Graduate Studies will review the recommendation for dismissal and, if appropriate, convene a committee of graduate faculty to review the dismissal recommendation. The student, the major professor, and the program's administrator will be allowed to appear before the committee. The committee will make a recommendation for action to the Dean of the College of Graduate Studies, who will make the final decision. Dismissal is from the student's degree, program, and the College of Graduate Studies.
- **Appeals:** Students may appeal the Dean's decision directly to the Graduate Council. No action will appear on the transcript unless recommended by Graduate Council.

Graduate Assistantships

Graduate Assistantships are open to domestic and international students who are enrolled full time in the College of Graduate Studies. Students in the provisional or unclassified enrollment category or are not in good academic standing are NOT eligible to receive assistantships.

An inquiry for a position or award should be addressed to the Director of Graduate Studies in which the applicant plans to enroll. Appointments may be full-time (20 hours per week) or part-time (10 hours per week). All graduate assistants are considered student employees. Graduate assistants who provide primary teaching responsibilities, grade assignments, assist with the delivery of instruction through technology, and provide other assistance related to instruction under the active

supervision of a member of the university faculty are teaching assistants. Graduate assistants who provide support of research, scholarship, or creative activity are research assistants. Graduate assistants who provide support functions to a unit and are related to the graduate students' program of study are graduate support assistants. (See FSH 1565 H-2 for full definitions.) Those appointed to graduate assistantships supported by the university are advised that the appointments are tenable only in the program of the major field of study, except where prior written exceptions are made. Annual leave, sick leave, and health insurance benefits are not available for graduate assistants.

Graduate assistant appointments are awarded as either full-time (.5 FTE, 20 hours per week) or part-time (.25 FTE, 10 hours per week). All graduate assistants must be registered as full-time students (9 credit minimum). Full-time graduate assistants may accept an additional temporary help appointment not to exceed 10 hours per week. All temporary help appointments should be monitored to ensure the graduate assistant is able to keep up with both their academic work and the effort expected as a graduate assistant. International students must consult International Programs to confirm eligibility to work more than the full-time (20 hours per week) assistantship. Any temporary help appointment over 10 hours requires the approval of the Dean of the College of Graduate Studies.

Continuation of any graduate assistantship after the first semester is contingent upon remaining in good academic standing; satisfactory teaching, service, and/or laboratory performance; acceptable progress toward the degree; and having met the program and University's policies and procedures. U of I policies are available online in the Faculty Staff Handbook.

Graduate assistants are required to sign a Terms of Employment form for University of Idaho Employees. All assistants are required to have personal health insurance coverage or enrollment in the Student Health Insurance Program. Stipends for assistantships vary depending upon the type of assistantship, the discipline of the graduate program, and the length of service. Contact the Director of Graduate Studies in the program for current stipend levels.

All new graduate assistants are required to attend the Graduate Assistant Institute prior to the beginning of the semester in which they are first offered an assistantship. Dates and times are posted on www.uidaho.edu/cogs (<http://www.uidaho.edu/cogs/>). Additionally, graduate assistants are required to complete a follow-up program through the university online learning management system. All new international TAs are required to register for and successfully complete INTR 508 - Teaching and Learning Strategies for International Teaching Assistants (see University course schedule for times and location).

Graduate tuition and fees (excluding special lab and course fees) will be paid for each full-time graduate teaching and support assistant. Teaching and support assistants on half appointments will have 50% of their tuition and fees paid. The College of Graduate Studies pays the tuition and fees for teaching assistants. Support assistants' tuition and fees will be paid by the hiring unit. Research assistant tuition and fees may be paid by the hiring unit or through a grant/contract.

Students on an assistantship cannot use a staff fee waiver, staff spouse fee waiver or senior scholar fee waiver.

Research Fellowships

Research fellowships are awarded by various colleges or are received from granting agencies. Research conducted on fellowships may or may not be used for dissertation purposes. Credit enrollment and stipends

vary according to the particular fellowship. Fees and tuition are charged, but in some cases may be remitted, depending on the type of fellowship and the availability of funds. Inquiries should be addressed to the Director of Graduate Studies in the program in which the applicant plans to enroll.

Interdisciplinary Science and Technology (P.S.M.)

Professional Science Master. Major in Interdisciplinary Science and Technology.

The Professional Science Master (P.S.M.) degree is a national program offered by over 300 institutions who participate in coordination with the National Professional Science Masters Association (NPSMA). Contact the College of Graduate Studies for specific courses and requirements.

There are 3 requirements for the P.S.M. degree in Interdisciplinary Science and Technology:

- 12 credits of professional skills courses.
- 15 credits in scientific coursework in the student's emphasis area.
- 3 credits of electives or practicum/capstone experience.

Code	Title	Hours
Professional Skills Courses		12
Professional Skills courses are science based courses in communication, leadership, data science, and management. See the College of Graduate Studies for approved courses.		
Emphasis Areas		15
Select one of the following emphasis areas:		
Sustainable Soil and Land Systems (p. 298)		
Climate Change (p. 299)		
Water Resources (p. 299)		
Ecohydrological Science and Management (p. 299)		
Precision Nutrition for Animal and Human Health (p. 299)		
Sustainable Food and Fiber (p. 299)		
Geographic Information Skills, Mapping, and Monitoring (p. 299)		
Elective or Practicum /Capstone course		3
The elective course should complement the student's emphasis area, but does not have to be from within that emphasis area.		
Total Hours		30

A. Sustainable Soil and Land Systems Emphasis

Code	Title	Hours
Select 15 credits from the following electives:		
ENVS 428	Pollution Prevention	
ENVS 485	Energy Efficiency and Conservation	
ENVS 536	Principles of Sustainability	
FISH 540	Wetland Restoration	
FS 509	Principles of Environmental Toxicology	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
GEOG 513	Global Climate Change	
REM 440	Restoration Ecology	
WR 506	Interdisciplinary Methods in Water Resources	

B. Climate Change Emphasis

Code	Title	Hours
Select 15 credits from the following electives:		
BE 553	Northwest Climate and Water Resources Change	
BIOP 520	Introduction to Bioregional Planning	
FOR 462	Watershed Science and Management	
GEOG 401	Climatology	
GEOG 410	Biogeography	
GEOG 420	Land, Resources, and Environment	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
GEOG 513	Global Climate Change	

C. Water Resources Emphasis

Code	Title	Hours
Select 15 credits from the following electives:		
ENVS 450	Environmental Hydrology	
FISH 540	Wetland Restoration	
FOR 462	Watershed Science and Management	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
HYDR 512	Environmental Hydrogeology	
WR 506	Interdisciplinary Methods in Water Resources	

D. Ecohydrological Science and Management Emphasis

Code	Title	Hours
Select 15 credits from the following electives:		
ENVS 450	Environmental Hydrology	
FISH 415	Limnology	
FISH 430	Riparian and River Ecology	
FISH 515	Large River Fisheries	
FISH 540	Wetland Restoration	
FOR 462	Watershed Science and Management	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
HYDR 512	Environmental Hydrogeology	
REM 440	Restoration Ecology	

E. Precision Nutrition for Animal and Human Health Emphasis

Code	Title	Hours
Select 15 credits from the following electives:		
AGEC 451	Applied Environmental and Natural Resource Economics	
BE 585	Fundamentals of Bioenergy and Bioproducts	
BE 592	Biofuels	
FSP 438/538	Lignocellulosic Biomass Chemistry	
FSP 536	Biocomposites	
PLSC 407	Field Crop Production	
PLSC 546	Plant Breeding	

F. Sustainable Food and Fiber Emphasis

Code	Title	Hours
Select 15 credits from the following electives:		
AGED 406	Exploring International Agriculture	
FS 564	Food Toxicology	

PLSC 407	Field Crop Production
PLSC 546	Plant Breeding
PLSC 551	Vegetable Crops
SOIL 417	Market Garden Practicum
SOIL 438	Pesticides in the Environment
SOIL 446	Soil Fertility
SOIL 527	Sustainable Food Systems

G. Geographic Information, Skills, Mapping, and Monitoring Emphasis

Code	Title	Hours
Select 15 credits from the following electives:		
ECE 516	Image Sensors and Systems	
FIRE 554	Air Quality, Pollution, and Smoke	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
REM 507	Landscape and Habitat Dynamics	
STAT 419	Introduction to SAS/R Programming	
STAT 555	Statistical Ecology	

Courses to total 30 credits for this degree.

Interdisciplinary Studies (M.A. or M.S.)**Master of Arts/Master of Science. Major in Interdisciplinary Studies.**

Admission for graduate study leading toward an M.A. or M.S. in Interdisciplinary Studies may be granted to a student who

1. has received a bachelor's degree from a regionally accredited college or university, and
2. has an undergraduate cumulative grade point average of 3.0 or higher.

The GRE General Test is required. As the application requirements are significantly different for the interdisciplinary graduate program, a student wishing to apply to an interdisciplinary degree program should contact the College of Graduate Studies to discuss their proposed course of study prior to applying.

With the application for admission the student must submit the following:

1. a written statement specifically describing the interdisciplinary proposal and outlining their rationale for undertaking an interdisciplinary program,
2. the name of a faculty member with graduate faculty status from one of the disciplines named in the proposal who has agreed to counsel the student in the proposed program and serve as major professor,
3. a proposed study plan, and
4. a program committee.

The program committee must have at least four members: at least one member from each of the principal departments or disciplines involved in the student's program and one member appointed by the dean of the College of Graduate Studies. At least one half of the program committee must be members of the Graduate Faculty.

The objective of the graduate interdisciplinary studies degree is to provide a student with the opportunity to design a specific program of study when the student's needs or desires do not fall within an established graduate program. The M.A. or M.S. degree in interdisciplinary studies is a rigorous program that integrates existing graduate level coursework from two or more graduate programs. Students may choose between the Master of Arts and the Master of Science degree options, and either option can be non-thesis or thesis. A student choosing the thesis option may use up to six credits of INTR 500 toward the degree. Of the minimum 30 credits required, at least 18 must be at the 500-level. The remainder may be at the 400-level. In addition to graduate courses drawn from two or more departments, some of the courses from the Interdisciplinary Studies "Courses" section of the Catalog may be useful. Students majoring in Interdisciplinary Studies should register for INTR 500 for their thesis research, INTR 502 for directed study, INTR 599 for research not directly related to a thesis, and INTR 501 Seminar for seminar. The major professor or department administrative assistant will contact the College of Graduate Studies to enter these courses on the class schedule. No more than ten credits in total of directed study, special topics, or seminar will be allowed.

There is no typical study plan for an interdisciplinary studies degree program. Each student seeking the master's degree in interdisciplinary studies must, with the counsel of a major professor, develop a study plan which blends the two graduate programs and supports the student's interdisciplinary proposal. The proposed study plan must be unanimously approved by the student's program committee and the dean of graduate studies.

The program is administered by the department of which the student's major professor is a member. For both the thesis and non-thesis options, there must be a comprehensive examination that evaluates the student's ability to integrate all disciplines included in the program and to respond logically to related questions of a general nature. The general university credit requirements for the M.A. and M.S. degrees apply to the interdisciplinary studies degree as well; see the College of Graduate Studies (p. 292) section for the requirements applicable to all M.A. and M.S. degrees.

Procedural details for developing, receiving approval for, and carrying out an interdisciplinary degree program are available from the College of Graduate Studies.

Master's Degrees

Current Language (now only accurate for Mathematics)

Master of Arts in Teaching (M.A.T.) Mathematics

The M.A.T. is primarily for certified teachers who wish to strengthen their subject-matter preparation. Enrollment in this program of study requires the consent of the chair of the Mathematics Department. The major professor is from the Mathematics Department; the co-advisor is from the Department of Curriculum and Instruction. The general requirements of the College of Graduation Studies apply except that, of the minimum 30 credits required, only six must be in courses at the 500 level, at least six must be in courses offered by the College of Education at the 400/500 level, excluding workshops, and at least 20 must be in courses in the subject field. These courses may be at the 300 or 400 level, including 300 level courses in the major field if they are a part of the logical sequence of study. A non-thesis requirement in the subject field must be met.

New language for COEd

Master of Arts in Teaching (M.A.T.) Secondary Education

The MAT degree is a non-thesis degree designed for individuals who have a bachelors (B.A or B.S) degree in a subject matter area approved for an Idaho teaching credential and wish to seek a graduate degree in education and receive recommendation for initial Idaho teaching certification. The MAT degree requires 32 credits in graduate coursework including a 10 credit internship (student teaching) experience. Candidates will be required to complete a non-thesis requirement and may be required to take additional coursework at the undergraduate level if their bachelors degree does not meet the content requirements in the subject area. Additionally, candidates for an Idaho teaching credential must pass a state-mandated content competency assessment in order to receive a recommendation for certification. Completion of the MAT degree may not qualify students for teaching certification in states outside of Idaho.

Credits

All master's degree programs require a minimum of 30 credits. Some master's degree programs may require more. Additional work may be stipulated in individual cases to meet particular objectives or need for additional background. Courses used toward an undergraduate degree, professional development courses or courses on a professional development transcript are not available to be used toward a graduate degree.

No more than three credits of workshop or workshop equivalent courses and no more than nine credits of directed study (499/502) may be used toward the graduate degree.

Credit in course 500 (Master's Research and Thesis) or 600 (Dissertation) cannot be counted toward a non-thesis master's degree. Although no limit is imposed on the number of credits that may be earned in course 500 for degrees with thesis, only a maximum of 10 credits in course 500 in the major of the degree can be used to fulfill master's degree requirements (a lower limit may be set by the program). Up to six credits of course 599 (Non-thesis Research) are allowed to count towards a non-thesis master's degree; however, if a thesis option exists for the program, no more credits of course 599 are allowed toward the non-thesis master's degree than half the number of credits allowed for course 500 toward the program's master's degree.

Transfer, Correspondence Study, Non-degree Credit, and Over-aged Credit Limitation

The combined total of transfer credits, correspondence credits, non-degree credits, credits moved from an undergraduate transcript that were not used toward an undergraduate degree, and approved credits more than eight years old at the time the degree is awarded shall not exceed 12 credits for master's programs designated as requiring 36 or fewer credits, and shall not exceed one-third of the total credits in designated programs requiring more than 36 credits. The student's program may set a lower limitation. Credits can be transferred to UI, with the consent of the student's committee and the dean of the College of Graduate Studies, only if the institution from which the course credits are being transferred has a graduate program in the course's discipline or, should there be no graduate program in the course's discipline, if an exception has been granted by the Dean of the College of Graduate Studies. All credits used toward graduate degrees must be from regionally accredited

American institutions or from non-US institutions recognized by the appropriate authorities in their respective countries. Transfer credits are subject to all other Graduate College rules and regulations. See additional information on accreditation: www.uidaho.edu/registrar/transfer/evaluation/accreditation (<http://www.uidaho.edu/registrar/transfer/evaluation/accreditation/>).

Second Master's Degrees

A student who has a master's degree or is working on a master's degree may obtain a second master's degree only in a different major, subject to the approval of the dean of the College of Graduate Studies. Up to six credits of course work used to satisfy the requirements for the first degree may be applied to the second; all other catalog requirements and credit requirements in UI courses must be fulfilled. If the courses are transfer courses, they are counted as a part of the credits that are allowed for transfer, correspondence, non-degree, over-aged credits and credits moved from an undergraduate transcript.

With department approval, a student in the M.F.A. Theater Arts program may use up to 30 credits from a M.A. Theater Arts program toward the M.F.A. A student who is enrolled in a doctoral program or who has a doctorate may obtain a master's degree in a different field and use up to 6 common credits or more if approved by Graduate Council. A student who has a doctorate may not subsequently obtain a master's degree in the same field.

Concurrent Graduate/Law Degrees

UI law courses used toward an approved UI concurrent graduate degree must be approved by the College of Graduate Studies and included on the graduate student's approved study plan. Courses with grades and credits earned in these approved law courses will be posted to the student's graduate academic transcript as a pass (P) upon receipt of the Course Level Adjustment form in the UI Registrar's Office. See the Accounting (p. 173), Environmental Science (p. 389) and Water Resources (p. 151) sections in the individual department section for additional information on concurrent degrees.

Awarding M.F.A. Degrees to Members of the Faculty

A UI faculty member with rank of senior instructor or above may not be awarded an M.F.A. degree through the department or corresponding program in which they are employed, unless that faculty member had been admitted to that degree program before attaining such academic rank.

Master of Accountancy

The M.Acct. degree is 30 credits. At least 18 must be in courses at the 500 level and the remainder may include one 400 level course in the major and 300 and 400 level courses in supporting areas, to be approved by the major professor. A non-thesis requirement must be met. Students enrolled in the concurrent M.Acct./J.D. may use 15 credits of law courses toward the M.Acct. degree only if the law degree is completed.

Master of Architecture

The M.Arch. degree requires a design project. Refer to the Art and Architecture section of this catalog for a definition of specific admission and degree requirements. Of the minimum 45 credits required for the degree, 24 must be at the 500 level; the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas.

All credits toward the degree must be earned in residence at UI or during internship and study abroad. A final design project must be accepted.

Master of Arts

In some fields, all candidates for the M.A. degree are required to present a thesis; in others the thesis is optional or not required. Consult the departmental section for specific descriptions. Of the minimum 30 credits required for the degree, at least 18 credits must be at the 500 level; the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas. For the thesis student, a thesis is required. For the non-thesis student, a non-thesis requirement must be met.

Master of Arts in Teaching

The M.A.T. is primarily for certified teachers who wish to strengthen their subject-matter preparation. Enrollment in this program of study requires the consent of the chair of the subject-matter department. The major professor is from the subject-matter department; the co-advisor is from the College of Education. The general requirements of the College of Graduation Studies apply except that, of the minimum 30 credits required, only six must be in courses at the 500 level, at least six must be in courses offered by the College of Education at the 400/500 level, excluding workshops, and at least 20 must be in courses in the subject field. These courses may be at the 300 or 400 level, including 300 level courses in the major field if they are a part of the logical sequence of study. A non-thesis requirement in the subject field must be met.

Master of Business Administration

The M.B.A. is a professional fee program that is delivered in an executive format in northern Idaho. This non-thesis program consists of 36 credits at the 500-level. Consult the College of Business for specific details.

Master of Education

To complete the M.Ed., a non-thesis degree program, the student must fulfill the program's non-thesis requirement. Of the minimum 30 credits required, at least 18 must be in courses at the 500 level; the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas.

Master of Engineering

The M.Engr. is a non-thesis degree. A minimum of 30 credits is required; at least 18 must be in courses at the 500 level and the remainder may include 400 level courses in the major and 300 or 400 level courses in supporting areas. A non-thesis requirement must be met. Majors are offered in agricultural, chemical, civil, computer, electrical, mechanical, and (at the University of Idaho Center, Idaho Falls only) nuclear engineering. The prospective student should consult the specific department for special entrance requirements.

Master of Fine Arts

The M.F.A. is the professionally recognized terminal degree in fine arts including art, creative writing, and theatre arts. See the specific department for credit requirements.

Master of Music

The M.Mus. degree, depending on the concentration selected, requires a thesis, public graduate recitals, or a final project. No credit is granted for the final project in a non-thesis degree plan and the project is subject

to approval of the supervisory committee. Both written and oral non-thesis requirements must be met in all degree options. Of the minimum 30 credits required for the degree, at least 18 must be in courses in the School of Music at the 500 level; the remainder may include 400 level courses in the School of Music and 300 or 400 level courses in other areas.

Master of Natural Resources

The M.N.R. program provides broad-based, advanced training in natural resource management and administration. The M.N.R. degree requires 30 semester credits beyond the bachelor's degree. Only courses at the 400 or 500 level counts toward the degree. At least 18 of the 30 credits must be at the 500 level. A comprehensive non-thesis requirement must be met.

Master of Public Administration

The M.P.A. program includes thesis and non-thesis options. Of the minimum 36 credits required for the degree, at least 18 must be in courses selected from prescribed core areas and 12 in designated optional areas of emphasis as described in the Department of Political Science section of this catalog; at least 18 of the 36 credits must be in courses at the 500 level. A public service internship is required of students with no appropriate work experience. For the thesis student, a thesis is required. For the non-thesis student, a non-thesis requirement must be met.

Master of Science

In some fields, all candidates for the M.S. degree are required to present a thesis; in others the thesis is optional or not required. Consult the departmental section for specific descriptions. Of the minimum 30 credits required for the degree, at least 18 credits must be at the 500 level; the remainder may include 400 level courses in the major, and 300 or 400 level courses in supporting areas. For the thesis student, a thesis is required. For the non-thesis student, a non-thesis requirement must be met.

Master of Science in Athletic Training

The M.S.A.T. is a non-thesis degree with a minimum of 88 credits at the 500-level required. Students may be admitted to the program through two methods: either by admission after completion of a bachelor's degree from a regionally accredited institution or by early admission after the completion of the junior year in the UI Athletic Training track in Exercise Science and Health (B.S.P.E.) or by completion of the junior year in an approved program at an institution with an articulated agreement with UI.

Students offered early admission to the graduate program must meet all admissions and prerequisite course work requirements for the Master of Science in Athletic Training degree, as well as all undergraduate requirements excluding the first 30 credits of the graduate program. Upon successful completion of the first 30 graduate credits, students may use these credits in transfer towards their undergraduate degree requirements. There is a professional fee for the M.S.A.T. program; consult the program coordinator for details.

Professional Science Master

Contact the Director of the Program in Environmental Science (p. 389) for information regarding this degree. Of the minimum 35 credits required for the degree, at least 26 credits must be at the 500 level; the remainder may include 400 level courses. This is a non-thesis program.

Education Specialist Degrees

The University of Idaho awards the degree of Education Specialist to students who want an organized program of graduate studies beyond the master's degree but who may not wish to pursue a doctoral program. The Education Specialist degree is delivered only by the College of Education.

Requirements for Education Specialist Degree

Credit Requirements

An acceptable program of at least 60 upper-division and graduate level semester credits beyond the bachelor's degree is required. Additional credits may be required for those who have master's degrees in other areas of emphasis or who have deficiencies. Credits listed on an undergraduate transcript, professional development courses, or courses on a professional degree transcript are not available to be used toward a specialist degree. No more than three credits of workshop or workshop-related courses may be used toward a specialist degree. Thesis or dissertation credits cannot be used towards a specialist degree. Each student, following advising, will submit the study plan for approval to the major professor, the appropriate program administrator, and the dean of the College of Graduate Studies for approval.

Transfer, Correspondence Study, and Non-degree Credit Limitation

No more than 12 of the last 30 credits may be taken as transfer courses, correspondence courses (with prior written approval of the dean of the College of Graduate Studies), or non-degree courses. Transfer credits must be from institutions offering graduate programs in the discipline(s) of the course(s) being transferred. All credits used toward graduate degrees must be from regionally accredited American institutions or from non-US institutions recognized by the appropriate authorities in their respective countries.

Time Limit

The last 30 credits must have been taken in the eight years preceding the semester in which the degree is awarded.

Procedures for Education Specialist Degree

See the General Graduate Regulations section regarding appointment of major professor, study plans, application for advanced degree, final semester registration, and non-thesis requirement.

Doctoral Degrees

The University of Idaho awards the degree of Doctor of Philosophy in recognition of high achievement in scholarly and research activity. The degree of Doctor of Education is granted for high scholarly attainment and in recognition of the completion of academic preparation for professional practice. See Procedures for Doctor of Philosophy and Doctor of Education Degrees for more details. The Doctor of Athletic Training is offered through the College of Education and the Department of Movement Sciences. See Procedures and Requirements Specific to the Doctor of Athletic Training for more details.

The major professor and program offering a particular doctoral program indicate the general philosophy of the degree program, the objectives of courses and seminars, the research specialties available, and

requirements unique to the department. Admission to the doctoral program is granted only to those who have a recognized potential for completing the degree.

Requirements for Doctoral Degrees

Credit Requirements

For the Ph.D. and Ed.D., a minimum of 78 credits beyond the bachelor's degree is required.; At least 52 credits must be at the 500 level or above and at least 33 of the 78 credits must be in courses other than 600 (Doctoral Research and Dissertation). A maximum of 45 research credits in 600 (Doctoral Research and Dissertation) including 6 credits of 599 (Non-thesis Research) or 500 (Master's Research and Thesis) may be in the 45 research credits used toward the degree. For the D.A.T., a minimum of 66 credits is required and follows a prescribed set of courses set by the program.

Courses numbered below 300 may not be used to fulfill the requirements for a doctoral degree; courses numbered 300-399 may be used only in supporting areas and are not to be used to make up deficiencies. Individual programs may require additional course work. Applicants having a doctoral degree may obtain a second doctoral degree subject to the approval of the Graduate Council. The Graduate Council will establish the requirements for the second degree.

Credit Limitations for Transfer, Correspondence Study, and Non-degree

For the Ph.D. and Ed.D. degrees, a student must complete at least 39 of the 78 required credits at UI while matriculated in the College of Graduate Studies. Credits can be transferred to UI, with the consent of the student's major professor, the committee (if required by the program), the program's administrator, and the dean of the College of Graduate Studies. Credits can be transferred only if the institution from which the credits are being transferred has a graduate program in the course's discipline. All credits used toward graduate degrees must be from regionally accredited American institutions or from non-US institutions recognized by the appropriate authorities in their respective countries. Transfer credits are subject to all other College of Graduate Studies rules and regulations. Correspondence study courses may be applied to the degree only with the prior written approval of the College of Graduate Studies. Courses used toward an undergraduate degree, professional development courses, and courses on a professional development transcript are not available to be used toward a doctoral degree.

Time Limits

Of the credits submitted to satisfy the requirements for a Ph.D. or Ed.D. degree, a maximum of 30 may be more than eight years old when the degree is conferred, provided the student's committee and program administrator determine that the student has kept current in the subjects concerned. Graduation must occur no later than five years after the date on which the candidate passed his or her preliminary or general examination. These time limitations can be extended only on recommendation of the committee and approval by the Graduate Council.

Awarding Doctoral Degrees to Members of the Faculty

Regulations are outlined in Section 4920 of the Faculty-Staff Handbook.

Particular Requirements for the Ed.D. Degree

A period of professional practice is required for the Doctor of Education degree; the period involved is determined by the student's supervisory committee. While the Ed.D. is a College of Education degree, you should

consult with the departments in the College of Education to learn of specific emphasis requirements.

Procedures for Doctor of Philosophy and Doctor of Education Degrees

Appointment of Major Professor and Committee

Refer to the "Appointment of Major Professor and Committee for All Degree Seeking Graduate Students" in the preceding General Graduate Regulations section. In addition, a doctoral supervisory committee consists at least of four people: the major professor as chair and at least one additional UI faculty member from the program, the balance of the committee may be made up of faculty members from a minor or supporting area, and faculty members from a discipline outside the major. If the committee has a co-chair the minimum number of committee members is five.

Qualifying Examination

The qualifying examination is a program option and serves to assess the background of the student in both the major and supporting fields and to provide partially the basis for preparation of the student's study program. A particular program may or may not require a master's degree as a prerequisite for the qualifying evaluation. As soon as the program's qualifications are met, a supervisory committee is appointed.

Preparation of Study Plan

Refer to the "Preparation and Submission of Study Plan (p. 293)" in the preceding General Graduate Regulations section.

Preliminary Examination for Ph.D. Degree

The preliminary examination should be scheduled only after the student has completed the majority of the courses on his or her study plan. The student is required to be registered during the semester the preliminary examination is taken. The student's committee certifies to the College of Graduate Studies the results of the preliminary examination and if passed, the student is advanced to candidacy. Graduation must occur no later than five years after the date on which the candidate passed his or her examination. If the preliminary examination is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months or more than one year following the first attempt. If a student fails the preliminary examination a second time, or the program does not allow the student to repeat the examination after the first failure or the student does not retake the examination within one year, the student is automatically moved to unclassified enrollment status and is no longer in the degree program.

General Examination for Ed.D. Degree

When the student approaches the end of his or her course work, has completed the professional experience requirement and has outlined the dissertation subject in detail, the supervisory committee approves the holding of the general examination. The student is required to be registered during the semester the general examination is taken. The examination is both written and oral and is intended to assess progress toward degree objectives. The student's committee certifies to the College of Graduate Studies the results of the general examination and if passed, the student is advanced to candidacy. Graduation must occur no later than five years after the date on which the candidate passed his or her examination. If the general examination is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months or more than one year following the first attempt. If a student fails the general examination a second time, or the

program does not allow the student to repeat the examination after the first failure or the student does not retake the examination within one year, the student is automatically moved to unclassified status and is no longer in the degree program.

See the General Graduate Regulations (p. 293) section regarding application for advanced degree, registration requirements, final defense and dissertation requirements.

Procedures for Doctor of Athletic Training The Culminating Clinical Project

Students enrolled in the Doctor of Athletic Training (D.A.T.) will engage in research projects during the curricular phase of the program. These project(s) will lead to at least two publication ready manuscripts and all students must meet professional authorship requirements (regardless of order). See Department of Movement Sciences and Doctor of Athletic Training webpages for more information.

The Team (Committee)

All D.A.T. project team committees will have at least four committee members: two members of the athletic training faculty (all with graduate faculty status), the student's Attending Clinician (who is the student's on-site mentor during the student's residency), and an expert in the student's chosen area of clinical research. The AT faculty members will always chair the CCP, provide research guidance, and serve as the experts in the development of advanced practice in Athletic Training. A situation may arise in which one or both of the members of the committee that are outside of the AT program faculty may have a degree less than that of which the student is seeking, however, the intent of the third and fourth D.A.T. committee membership is to provide outside validation of the student's progress toward advanced practice and clinical utility of action research studies.

Culminating Clinical Project Hours

These dissertation hours may be used in instances when the CCP has not been successfully completed and the curricular phase of program has been completed.

College of Law

Johanna Kalb, Dean; Aliza Cover, Assistant Dean for Faculty Development; Leon Samuels, Assistant Dean of Students - Boise; Erin Tomlin, Assistant Dean of Students - Moscow (Front Street Bldg.; 208/364-4620/Menard Law Building 208/885-2255)

The College of Law was organized in 1909 and is the only accredited law school in the state of Idaho. The College is a member of the Association of American Law Schools and is fully accredited by the American Bar Association.

Purpose of the College

The College of Law prepares students to enter the legal profession and represent individuals, businesses, and public and private entities in a wide array of legal and policy matters. The college also prepares students to engage in law-related endeavors in business, government, and non-governmental organizations and to provide important public service in their communities. The curriculum provides instruction over three academic years in the legal rules and principles generally applicable in the United States and international courts, including an emphasis on the ethical responsibilities assumed by legal professionals. The study

of law also prepares students for positions of leadership in government, business, or non-profit organizations.

The college's faculty adapt their methods of instruction to promote each student's highest potential. The college encourages individual initiative, the development of critical and logical thought, and effective written and oral communication. Students develop practical skills throughout the curriculum and participate in law-related volunteer service as a condition of graduation. Because the law changes rapidly, mere accumulation of information is subordinated to the more important ends of individual development and training in research, analysis, and critical habits of thought.

Admission to the Bar

The College of Law is fully accredited by the American Bar Association and is a member of the Association of American Law Schools, and its degree is accepted by all state bar associations. Educational prerequisites vary among states, and the secretary of the bar examiners in the state in which the applicant intends to practice should be contacted to determine the existence of special requirements.

Suggestions for Pre-legal Study

The subject matter of pre-legal education is less important than the quality of work performed. Although the most common pre-law majors are English, political science, social sciences, or business, law students are drawn from a broad range of undergraduate programs from agriculture and engineering to English and philosophy. The study of law requires logical analysis and effective written and oral communication. Any rigorous course of study that develops these skills is good preparation for law school. Beyond this, a well-rounded education is best. American government and western political philosophy are important in public law; economic and accounting concepts are basic to much business and commercial law; history, literature, philosophy, and psychology all provide useful insights into cultural tradition and human motivation that are important to the interpretation and application of law.

Most universities have a pre-law advisor, often through the Political Science Department, to advise students in selecting appropriate pre-law courses. At the University of Idaho, a pre-law advisor is available through the Political Science Department to guide students in selecting courses within the particular college or university that will meet these objectives. The Admissions Office at the College of Law is also available for general consultation in program planning.

3+3 Program

The American Bar Association's accreditation standards permit law schools to enroll students still in the process of completing their baccalaureate degrees so long as it will be completed by the end of the first year in the Juris Doctor degree. As a result of this standard, many law schools have 3+3 programs that allow undergraduate students, with the permission of their major advisor, to count up to 30 credits of the first year law curriculum toward the completion of the baccalaureate degree. A qualified student would complete three years of the baccalaureate degree and finish the remaining credits through the courses in the first year curriculum of the law degree. The law degree takes three years to complete, thus the 3+3 program title. The combined curriculum takes a year off of a student's schooling.

The conditions that must be met for a 3+3 degree student to receive serious consideration from the College of Law Admissions Committee are:

1. demonstration of outstanding ability by a cumulative grade point average at the most recently entered class median or higher, currently a 3.24 GPA;
2. demonstration of excellent aptitude for law study by a score on the LSAT at the most recently entered class median or higher, currently a 152; and
3. submission of a letter from the undergraduate major department attesting to the fact that the applicant will receive the baccalaureate degree after the successful completion of up to 30 credits of law study.

Application for Admission

Admission Requirements

Applicants for admission must have a bachelor's degree from an accredited four-year college or university by the date of enrollment at the College of Law. In special cases, it may be possible to be admitted after three years of undergraduate study: contact the College of Law for more information. Applicants must also arrange for a complete Credential Assembly Service (CAS) report, which consists of a Law School Admission Test (LSAT) score, copies of transcripts, and other relevant information.

Arrangements for taking the LSAT must be made by the individual applicant directly with the Law School Admission Council (LSAC) well in advance of the dates set for the LSAT. The dates and places for the test, application forms, and a bulletin of information about the test may be obtained by writing directly to LSAC, 662 Penn St., Newtown, PA 18940, by calling LSAC at 215-968-1001, or on their web site at www.lsac.org (<http://www.lsac.org>). This information may also be obtained from the pre-law advisor of most colleges and universities.

Commercial materials on the LSAT are available at most bookstores, and LSAT preparation courses may be found in many locations. Applicants are advised to study for the test ahead of time. Old LSAT scores older than five years are not accepted.

Registration with the CAS is required of all applicants. Instructions on registration for the CAS report and an application form for the purpose are contained in the same bulletin that describes the LSAT. Applicants should accomplish this registration at the same time they register for the LSAT. **It is the applicant's responsibility to assure that CAS has all required information and that the applicant's CAS Report is complete for release to the College of Law.** Be advised that it may take up to six weeks for a CAS Report to reach the College of Law.

Application Deadline

While the College of Law considers applications on a rolling basis, to be assured timely consideration for admission in the fall, all applications must be received by June 30. The college is unable to consider the application until a CAS Report has been received. This requires applicants to take the LSAT no later than May. However, in order to assure timely application, the October LSAT, almost a year before admission, is recommended. The college cannot be responsible for delays in the mail or at the CAS.

Decision on Admission

Admissions decisions are made by an admissions committee. The college receives many more applications than it can accept. Consequently, the Admissions Committee must deny admission to many who are qualified to study law. In general, offers of admission are

extended to those judged to present the greatest promise for success in law school. Matters relating to character are also considered in the admissions process.

Although undergraduate grade point average and LSAT scores are the most important factors used to arrive at this judgment, the committee will consider any additional information that an applicant believes is important in assessing their ability to perform law school work. A personal statement often provides insight into an applicant's motivation for attending law school, as well as functioning as a sample of writing ability, and is probably the most helpful additional item for most applicants. Graduate work and/or work experience may provide evidence of achievement and capabilities inadequately addressed by standard credentials. Letters of recommendation and prior written work may also help in assessing an applicant's relative promise. Letters of recommendation should be limited to two and should address the applicant's ability to engage in critical analysis and to communicate orally and/or in writing. The cultural and socioeconomic background of applicants is also considered to ensure the College of Law remains open to all students, as well as provides an environment in which diverse viewpoints are represented.

As a state-supported institution, the College of Law extends a preference to timely applicants who are Idaho residents. It is possible to establish Idaho residency for tuition purposes either prior to or after enrolling at the College of Law. Residency determinations are made by the University of Idaho Registrar's Office; inquiries about residency should accordingly be directed to that office at 208-885-6731.

Admission to the College of Law is very competitive. The median undergraduate grade point average for enrolled students is typically around 3.40, and the median LSAT score around 154. Statistics for the current year can be found at www.uidaho.edu/law/admissions (<https://www.uidaho.edu/law/admissions/>).

Every effort is made to notify timely applicants of a decision by early April. A small percentage of applicants may be placed in the "standby pool" and may not receive a final decision until late summer, subject to space available in the incoming class.

Upon acceptance, a \$500 deposit is required to secure a place in the fall entering class. This deposit will be applied to student fees upon registration. In cases of special need, the deposit may be waived.

Transfers from Other Schools

Space in each law school class is limited. Therefore, only a few transfers into the second year class can be accommodated. Special standards apply, and within these standards, a degree of preference is extended to residents of Idaho. Students transferring into our program are expected to complete at least three semesters at Idaho. Students desiring to study here for a lesser period should arrange to have credits at Idaho accepted toward a degree from the law college in which they are currently enrolled. Before a transfer applicant is considered, we must have a final transcript of all work that will have been undertaken at other law schools on file by the time of transfer. We also require a letter from the dean or assistant dean following the completion of all such work that states that the applicant remains in good standing, is eligible to continue without any condition or qualification, and ranks in the top 50 percent of their law school class. Consequently, for an applicant currently enrolled in a law school, no decision on transfer will be possible until June or later, when all grades from current work are available. If an applicant attends a summer session of a school of law, it will not be possible to process a final acceptance until the close of the summer session. If an applicant

needs some guidance before results of their spring semester's work become available, a tentative opinion about probable admissibility may be given.

Non-degree Candidates

Students who are not degree candidates in the College of Law but are enrolled elsewhere at the University of Idaho are permitted to register for law courses if they receive permission from both the course instructor and the assistant dean of students. Such courses cannot be credited toward a law degree even if the student is later admitted to the College of Law.

Fees

See the section on "Fees and Expenses (p. 57)".

Grading System

Grades for courses taken in the College of Law shall be awarded on the basis of A, A-, B+, B, B-, C+, C, C-, D+, D, D-, and F; provided, however, that by resolution the law faculty may designate any course, or courses, to be graded on a pass-fail or pass-no pass basis. Any approved course work taken at any other law school will be recorded on the transcript as a "P" if the student earned a "C" or better in that course. No credit will be awarded for work done at another law school if the student earned less than a grade of "C." Up to 6 credit hours of UI graduate level courses may be taken with special permission of the associate dean. Credits will be recorded as "P" for course work in which the student earns a "B" or better. Grades of "P" are not included in calculating a student's grade-point average or class ranking in the College of Law. Exceptions to the above may be made for UI graduate level courses used in the approved UI law/graduate concurrent degree programs.

Grade-point averages of students in the College of Law shall be computed by assigning the following numerical point values per semester hours: A = 4.00; A- = 3.67; B+ = 3.33; B = 3.00; B- = 2.67; C+ = 2.33; C = 2.00; C- = 1.67; D+ = 1.33; D = 1.00; D- = 0.67; F (or "fail" under the pass-fail basis) = 0.00. The cumulative grade-point average is the quotient of total points assigned divided by total hours undertaken. Courses in which marks of I, W, P (pass) or NP (no pass) have been given shall be disregarded in the computation. All course grades shall be included on the transcript and (except for marks of I, W, P or NP) in the calculation of the grade-point average, even if courses have been repeated. (For further information about repeating courses, see below.)

This grading system applies in determining:

1. eligibility for continuing study in the College of Law;
2. compliance with requirements for the Juris Doctor degree; and
3. class ranking within the College of Law.

Grades are based on a variety of assessments, including midterm exams, final exams, and final papers, which are described in the syllabus for each course.

Final grades for Incompletes received in the Fall semester or Intersession must be assigned by the last day of the following Summer semester. Final grades for Incompletes received in the Spring semester or Summer session must be assigned by the last day of the following Fall semester. Incompletes not made up before that date automatically revert to the grade indicated by the professor as the "permanent" grade, usually an "F." The grade ultimately given will be computed in the GPA for the semester in which the class was begun.

Repeating Courses for Credit

A student who has completed a law school course in which they have received a grade of C-, D+, D, or D- may repeat that law school course once (the "repeated course"), subject to the following conditions:

1. The credit hours earned by the student upon completion of the repeated course shall appear on the law school transcript, but shall not be applied toward the total number of required credit hours for award of the Juris Doctor degree by the College of Law.
2. The grade earned by the student upon completion of the repeated course shall appear on the student's law school transcript, but shall not be calculated as part of the student's law school grade point average.

Repeating Failed Courses

1. A student who has completed a law school course in which they have received a grade of F (the "failed course") shall receive no credit hours for application toward the total number of required credit hours for award of the Juris Doctor degree by the College of Law, but the grade shall be calculated as part of the student's law school grade point average.
2. If the failed course is a course required for graduation, the student must repeat the course and receive a grade above an F in order to satisfy the graduation requirements. If the failed course is not required for graduation, the student may repeat the course one time only. If a student repeats a failed course and passes the course, the credit hours and grade received in the repeated course shall be treated as follows:
 - a. The credit hours earned by the student upon completion of the repeated course shall appear on the law school transcript and shall be applied toward the total number of required credit hours for award of the Juris Doctor degree by the College of Law.
 - b. The grade earned by the student upon completion of the repeated course shall appear on the student's law school transcript, but shall not be calculated as part of the student's law school grade point average.

Concurrent Degrees

Concurrent Degrees (M.Acct./M.P.A/M.S./Ph.D.) and other Graduate-Level Courses

Graduate-level courses used toward an approved concurrent law degree must be approved by the College of Law. Grades and credits earned in these approved graduate courses will not be calculated in the student's institutional College of Law GPA or College of Law class ranking.

The University of Idaho currently offers the following concurrent programs:

- J.D./M.Acct. - Accounting
- J.D./M.P.A. - Public Administration
- J.D./M.S. - Environmental Science
- J.D./M.S. - Water Resources
- J.D./Ph.D. - Water Resources

For information on the concurrent J.D./M.Acct. see the Accounting (p. 173) section. For information on the concurrent J.D./M.S. and J.D./Ph.D. degrees, see the Program in Environmental Science (p. 389) section, or the Program in Water Resources (p. 151) section. For

information on the concurrent J.D./M.P.A., see the D (p. 336) department of Politics and Philosophy (p. 330) section. UI graduate-level courses will be recorded on the law student's academic record as a comment only.

For the concurrent J.D./M.Acct., J.D./M.S., and J.D./Ph.D. degrees, a student will be required to complete both degrees for the College of Law to count twelve credits towards the J.D. degree. If a student fails to receive the M.Acct., M.S. or Ph.D. degree a maximum of six semester credits earned in the M.Acct., M.S., or Ph.D. program may count towards the J.D. degree with the approval of the College of Law assistant dean. Information on the JD/MBA Concurrent degree program offered in cooperation with Washington State University, please contact the College of Law.

Additional Information

For detailed information about the College of Law, see the College of Law Catalog or visit their website, www.uidaho.edu/law (<http://www.uidaho.edu/law/>).

Law (J.D.)

Required course work includes the College of Law requirements and the following:

Code	Title	Hours
LAW 8050	Civil Procedure and Introduction to Law	4
LAW 8590	Advanced Advocacy	2
LAW 8070	Property	4
LAW 8090	Torts	4
LAW 8120	Criminal Law	3
LAW 8130	Contracts	4
LAW 8150	Legal Writing & Analysis	2
LAW 8160	Constitutional Law	4
LAW 8210	Legal Research	1
LAW 8250	Written and Oral Advocacy	3
LAW 9500	Evidence	3
LAW 9620	Professional Responsibility	3
LAW 8170	Academic Skills Lab I	1

Select 6 credits from the list of experiential learning courses approved by the College of Law Faculty and provided in the Law Student Handbook.

For students in the fourth quartile, the following courses are also required; optional for all other students with permission.

LAW 8180	Academic Skills Lab II	
LAW 8600	Applied Legal Reasoning	

A maximum of 21 distance credits may be applied toward the J.D. No more than 6 distance credits applied toward the J.D. may come from courses outside the College of Law unless earned pursuant to an approved concurrent degree program.

To qualify for the J.D., the candidate must have a UI grade-point average of 2.30 or better. The GPA required for good academic standing is 2.30.

Satisfaction of the Upper-Division Writing Requirement through Law Review, or a Directed Study, or particular designated courses each year

50 Hours of uncompensated law related pro bono service

Total Hours

44

Courses to total 90 credits for this degree.

Students may choose to complete one of the following three emphases. To complete a J.D. with any of the listed emphases a student must complete the above general J.D. requirements and the requirements of one of the emphases.

A. Business Law Emphasis

In addition to the requirements for the J.D., students in the Business Law Emphasis must complete the following requirements:

Students pursuing this emphasis must earn a minimum grade of 'C+' in each course taken to satisfy Business Law Emphasis requirements, plus a cumulative 2.80 grade point average over all courses used to satisfy Business Law Emphasis requirements.

Students must complete an in-depth research paper that the student's BLE Advisor agrees is relevant to the track chosen by the student and that satisfies the Upper Division Writing Requirement.

Code	Title	Hours
Required courses:		10-11
LAW 9250	Property Security	
LAW 9190	Business Associations	
LAW 9300	Taxation I	
Select one skills class from the following:		2-3
LAW 8620	Arbitration Law	
LAW 9210	Accounting for Lawyers	
LAW 9170	Negotiation and Appropriate Dispute Resolution	
LAW 9320	Estate Planning	
LAW 9730	Field Placement - Independent Study	
LAW 9750	Field Placement-Public Service	
LAW 9780	Entrepreneurship Law Clinic	
Select one of the following groups of courses:		12
LAW 9760	Semester in Practice	
Group A, Transactional Law Track		
LAW 9240	Sales	
Select 9 credits from the following:		
LAW 8510	Advanced Torts	
LAW 8960	Agriculture Law	
LAW 9030	Introduction to Intellectual Property	
LAW 9070	Administrative Law	
LAW 9080	Workplace Law	
LAW 9090	Energy Law	
LAW 9100	Antitrust	
LAW 9200	Securities Regulation	
LAW 9210	Accounting for Lawyers	
LAW 9220	Trademarks and Unfair Competition	
LAW 9230	Payment Systems	
LAW 9260	Bankruptcy	
LAW 9840	Real Estate Transactions	
LAW 9920	White Collar Crime	
Group B, Intellectual Property Law Track		
LAW 9030	Introduction to Intellectual Property	
Select 9 credits from the following:		
LAW 8500	First Amendment Seminar	

LAW 9070	Administrative Law
LAW 9090	Energy Law
LAW 9100	Antitrust
LAW 9180	Internet Law
LAW 9210	Accounting for Lawyers
LAW 9220	Trademarks and Unfair Competition
LAW 9310	Patents and Law Practice
LAW 9800	Copyrights
Total Hours	24-26

Courses to total 90 credits for this degree

B. Native American Law Emphasis

In addition to the requirements for the J.D., students in the Native American Law emphasis must complete the following requirements:

Students pursuing this emphasis must earn a minimum grade of 'C+' in each course taken to satisfy Native American Law emphasis requirements, plus a cumulative 2.80 grade point average over all courses used to satisfy Native American Law emphasis requirements.

Code	Title	Hours
Required courses:		
LAW 9490	Native American Law	3
LAW 9280	Tribal Nation Economics & Law	3
or LAW 9790	Native American Natural Resource Law	

Plus completion of the requirements from one of the following course tracks. Substitution from UI and WSU graduate courses allowed for one course in each track with pre-approval of Native American Law emphasis advisor.

Economic Development Track

Select 6 credits from the following:

LAW 9030	Introduction to Intellectual Property
LAW 9070	Administrative Law
LAW 9080	Workplace Law
LAW 9100	Antitrust
LAW 9190	Business Associations
LAW 9210	Accounting for Lawyers
LAW 9230	Payment Systems
LAW 9250	Property Security
LAW 9260	Bankruptcy
LAW 9270	Business Entities Taxation
LAW 9300	Taxation I
LAW 9310	Patents and Law Practice
LAW 9320	Estate Planning
LAW 9450	Community Property
LAW 9840	Real Estate Transactions

Family Law Track

Select 6 credits from the following:

LAW 9130	Family Mediation
LAW 9400	International Human Rights
LAW 9410	Wills Estates & Trusts
LAW 9630	Family Law
LAW 9640	Children and the Law
LAW 9650	Elder Law

LAW 9680	Domestic Violence and the Law
LAW 9850	Immigration Law and Policy

Governance Track

Select 6 credits from the following:

LAW 9040	Federal Courts
LAW 9070	Administrative Law
LAW 9080	Workplace Law
LAW 9120	Civil Mediation
LAW 9160	Public Interntl Law
LAW 9170	Negotiation and Appropriate Dispute Resolution
LAW 9340	Land-Use Law and Planning
LAW 9440	State and Local Government Law
LAW 9590	Critical Legal Studies
LAW 9600	Conflict Of Laws
LAW 9610	Jurisprudence

Natural Resource Management Track

Select 6 credits from the following:

LAW 9340	Land-Use Law and Planning
LAW 9380	Intl Environ & Water Law
LAW 9390	Law, Science, & Environment
LAW 9420	Water Law of the American West
LAW 9470	Environmental Law
LAW 9480	Public Lands and Resources Law
LAW 9690	

Self Directed Track

Six credits in courses pre-approved by the Native American Law Advisor emphasis advisor

Total Hours **12**

Courses to total 90 credits for this degree

C. Natural Resources and Environmental Law Emphasis

In addition to the requirements for the J.D., students in the Natural Resources and Environmental Law emphasis must complete the following requirements:

Students pursuing this emphasis must earn a minimum grade of 'C+' in each course taken to satisfy Natural Resources and Environmental Law emphasis requirements, plus a cumulative 2.80 grade point average over all courses used to satisfy Natural Resources and Environmental Law emphasis requirements.

Code	Title	Hours
Required Courses:		
LAW 9070	Administrative Law	3
LAW 9710	Lawyering Process Seminar	2
Select 10 credits from the following:		
LAW 8520	NREL Field Course	
LAW 9340	Land-Use Law and Planning	
LAW 9380	Intl Environ & Water Law	
LAW 9390	Law, Science, & Environment	
LAW 9420	Water Law of the American West	
LAW 9470	Environmental Law	
LAW 9480	Public Lands and Resources Law	
LAW 9690		

LAW 9790	Native American Natural Resource Law
WR 506	Interdisciplinary Methods in Water Resources

Total Hours **15**

Courses to total 90 credits for this degree

1. Graduates will understand their professional and ethical obligations to their clients, the courts and the bar, and the public.
2. Graduates will demonstrate knowledge and understanding of substantive and procedural law and legal institutions.
3. Graduates will demonstrate the capacity to engage in sophisticated legal reasoning and analysis.
4. Graduates will be proficient at communicating complex legal arguments, reasoning, and analysis, both in writing and in oral communication.
5. Graduates will recognize that multiple different potential resolutions to a dispute exist, including avoiding disputes before they begin.

Law Emphases

Students majoring in Law have the option to pursue an emphasis in the following areas:

- Business Law and Entrepreneurship (p. 307)
- Native American Law (p. 308)
- Natural Resources and Environmental Law (p. 308)

Additional Information

For detailed information about the College of Law, see the College of Law Catalog / Law Student Handbook at www.uidaho.edu/law/students (<http://www.uidaho.edu/law/students/>) or visit the College of Law website, www.uidaho.edu/law (<http://www.uidaho.edu/law/>).

Natural Resources and Environmental Law Graduate Certificate

This 12-credit graduate certificate in Natural Resources and Environmental Law is intended primarily for non-law graduate students.

This certificate introduces professionals with limited to no prior legal training to the legal regimes in their day-to-day compliance activities. This certificate better prepares professionals to work as resource managers, agency scientists, ranchers, foresters, or other professions that extract, allocate, manage, or conserve natural resources.

Code	Title	Hours
LAW 9070	Administrative Law	3
LAW 9420	Water Law of the American West	3
LAW 9470	Environmental Law	3
LAW 9480	Public Lands and Resources Law	3

Courses to total 12 credits for this certificate

College of Letters, Arts and Social Sciences

Sean M. Quinlan, Dean (112 Admin. Bldg.; 208-885-6426); Traci Craig, Associate Dean of Research & Faculty Affairs; Annette Folwell, Associate Dean for Undergraduate Studies.

The largest division of the university, the College of Letters, Arts, and Social Sciences (CLASS), has four goals:

1. Prepare individuals for an array of careers and professions;
2. Foster scholarly inquiry, creative activity, and the generation of knowledge;
3. Serve the public; and
4. Provide the cultural and contextual foundation on which other academic and professional colleges depend.

The College—through its 10 departments and schools and several interdisciplinary programs—prepares broadly educated individuals capable of open inquiry, critical thinking, and effective communication, who understand and are responsive to the needs of individuals and society. The College values the integration of learning and discovery in its efforts to develop and support distinctive programs that enhance the land grant mission of the university within the context of the arts, humanities, and social sciences. Students are prepared to become knowledgeable, contributing citizens in a world of diverse cultures and contexts. Beyond learning how to discover, analyze, and integrate knowledge across disciplines, graduates come to value lifelong learning as the basis for excellence in any endeavor.

Admission to the College

Students who expect to enter CLASS should plan their high school electives carefully, both to lay the foundation for their general education, which will be continued in the university, and to ensure that they are adequately prepared to begin their study at the college level. Students should select subjects in English, foreign language, social sciences, natural sciences, mathematics, and fine arts that provide a well-rounded preparation for further study. For a statement of general undergraduate and graduate admission requirements, see the admissions (p. 41) portion of the catalog.

Regular Enrollment in a Program of Studies

Students in CLASS must enroll in regular programs unless they are admitted as a non-degree seeking student. A regular program is one that leads to a degree that the College offers.

Teacher Education Program

Students in CLASS who are preparing for secondary-school teaching should consult the section on the College of Education, Health and Human Sciences (p. 202).

General College Requirements for Graduation

The College requirements applicable to the B.A. and B.S. degrees are listed in the relevant college section. The requirements for the various professional degrees (i.e., B.F.A. and B.Mus.) are listed by academic unit.

The College B.A. and B.S. requirements do not apply to these professional degrees.

College Requirements for the B.A. and B.S. Degrees

Objectives. The College requirements for the B.A. and B.S. degrees are designed to ensure a broad, liberal education through the attainment of the following objectives:

1. proficiency in written and spoken English;
2. appreciation of great literature, music, and art;
3. knowledge of human development, the growth of social and economic institutions, and an understanding of the rights and responsibilities of the individual citizen;
4. perspective of American culture in the world at large;
5. sense of historical perspective;
6. acquaintance with moral, ethical, and aesthetic values;
7. familiarity with scientific thought and method;
8. ability to use and interpret basic mathematical concepts;
9. understanding of ecology; and
10. a continuing attitude of intellectual curiosity.

Requirements for the B.A. Degree

Humanities

6 credits (two courses) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Social Sciences

3 credits (one course) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Foreign/Second Language

0-16 credits (zero-four courses), i.e., competence in one foreign/second language equivalent to that gained by the completion of four semesters of college courses (through the intermediate level). This requirement may be satisfied by the completion of either of the following options:

1. 16 credits or four high-school units in one foreign/second language, or
2. 12 credits in one foreign/second language, and one three-credit course in literature translated from the same language. The 12 credits may be satisfied by three high-school units in one foreign/second language. A student may use coursework in American Sign Language offered at other institutions to fulfill this requirement. The coursework must be equivalent to that required at UI to fulfill this requirement.

Requirements for the B.S. Degree

Humanities

3 credits (one course) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Social Sciences

3 credits (one course) in addition to the minimum university-wide general education requirement in humanities/social sciences.

Natural Sciences, Mathematics, and Statistics

6 credits (two courses) in addition to the minimum university-wide general education requirement in natural sciences/math.

For the B.S. degree, the student may substitute the successful completion of an academic minor, second major, or area of emphasis of

at least 18 credits approved by the department in which the student is majoring.

Progress in Satisfying These Requirements

Students who wish to graduate by the end of four years of college work should take a program that results in substantial progress toward the fulfillment of the preceding requirements by the end of the sophomore year. In particular, students seeking the B.A. degree should take courses in fulfillment of the foreign-language requirement as early as possible. If they cannot do this during the first semester, they should immediately take a course that can be used in partial fulfillment of the science-mathematics requirement.

Departments and Programs of Instruction

At both the undergraduate and graduate level, the curricula of CLASS emphasize the aesthetic, historical, ethical, and social dimensions and interpretations of human existence. Included within CLASS are the Departments of Culture, Society, and Justice; English; History; Modern Languages & Cultures; Politics and Philosophy; Psychology and Communication; and Theatre Arts. The College is home to the School of Journalism and Mass Media, the Lionel Hampton School of Music, and the School of Global Studies. Other programs offering degrees through CLASS include General Studies, Interdisciplinary Studies, Latin American Studies, and Organizational Sciences. The departments and schools in CLASS provide dozens of curricula and curricular options leading to certificates, minors, and baccalaureate degrees as well as programs of graduate study leading to master's and doctoral degrees.

Undergraduate

See departmental sections.

Graduate

The College of Graduate Studies offers work toward advanced degrees in many disciplines in CLASS. Work leading to a master's degree is currently available in the fields of anthropology, creative writing, English, history, music, philosophy, political science, psychology, public administration, and theatre arts. The degree of Doctor of Philosophy is available in history, philosophy, political science, and psychology. For specific degrees available, see the list of programs compiled in the General Catalog.

General Studies

The College also serves those students who have not decided upon a particular program of study by providing a course of study and degree that allow students to complete their general education requirements and explore a broad-based university curriculum without specialization. For details, see the program in general studies.

Non-degree

A non-degree program is offered in which each student's course of study is worked out to meet their special needs. The program is intended primarily for students who:

1. do not plan to obtain degrees at the University of Idaho,
2. plan to transfer to other institutions, or
3. have objectives that are not provided for by any of the established curricula in the College.

Interdisciplinary Studies

Students who have educational goals that necessitate work in several disciplines or departments may present an interdisciplinary curriculum

for the B.A. or B.S. degree. For details, see the program in interdisciplinary studies.

Online Programs

For information regarding this programs, please see our website: www.uidaho.edu/class/online (<https://www.uidaho.edu/class/online/>).

Major Curricula Selection of a Major

Each student should select a major curriculum no later than the beginning of the junior year. Lower-division students who have not decided on a major may pursue the Bachelor of General Studies.

Major Requirements

The departmental requirements are stated under the respective curricula.

Department of Culture, Society and Justice

Brian Wolf, Chair (101 Archie Phinney Hall 83844-1110; phone 208-885-6751).

The department provides students with three interrelated disciplines in which they can pursue a B.A. or B.S. degree: Anthropology, Sociology, and Criminology. Our department is an ideal academic home for students interested in developing their understanding of people, society and justice, cultural and social diversity, intercultural and global relations, and issues of justice, crime, and society. These programs give students the tools and perspectives necessary to understanding themselves and others in social and cultural contexts and systems of justice. The educational experience in anthropology, criminology, or sociology—including ample opportunity for interactions with faculty—provides a foundation from which students can better appreciate the challenges they face in their professional and personal lives.

Anthropology is the comprehensive study of the human condition, from humanity's evolutionary past to its biological diversity, from the prehistoric and historic past to modern cultural and linguistic diversity, from rural societies to urban societies. While the program at the University of Idaho considers the breadth of these topics and issues, its primary focus is on Indigenous peoples and international development, contemporary U.S. culture, historical archaeology, archaeological conservation and stabilization, and the archaeology and ethnography of the Indian Tribes of the North American Plateau. Graduates of the program are able to apply the anthropological skills and knowledge with an eye toward making a difference. Graduates go on to experience successful careers or pursue advanced programs of graduate studies.

Criminology is the study of the causes and consequences of crime. Coursework in criminology includes a comprehensive understanding of explanations of crime, research methods used to scientifically measure and study crime, the evaluation of crime control policies, and a consideration of the broader social and political context of crime and justice. Elective courses will acquaint students with various types of crime and norm violation such as juvenile delinquency, social deviance, violent crime, white collar crime, and terrorism. In addition, institutional responses through policing and punishment are also considered. Students will gain a comprehensive understanding of the problems of crime and the criminal justice system. Students may pursue their

criminology degree, either entirely or in part, in our online criminology program.

Sociology is the scientific study of human behavior, with an emphasis on understanding social interaction, groups, and organizations. It is an ideal major for students who are curious about themselves and the world they live in; the goal of sociology is to help students develop a "sociological imagination," the ability to understand how individual experiences, behaviors, and opportunities are influenced by the historical moment and social forces beyond the immediate control of any one person. In the criminology emphasis, students study the causes, consequences, and social responses to crime. The sociology program's strengths include U.S. and global diversity, globalization, social inequalities, criminology, deviance, policing, and applied research. The program provides students opportunities to gain practical work experience through internships and service learning. Students leave prepared for careers in social services, human resources, criminal justice, non-profit positions, community organizing, and applied research and provides a foundation for graduate education in sociology, criminology, social work, and law.

The department offers the academic certificate in Equity and Justice. The purpose of the certificate in Equity and Justice is to provide students with specific training in intercultural skills. The certificate recognizes competency in understanding a broad range of diversity issues (race, physical ability, gender, sexual orientation, age, religion, social class, etc.) and their relevance in social life and the workplace. The certificate provides students with a focused and work-related credential so they may be more competitive and effective in the job market.

The Archaeological Technician Program is designed to offer students a solid understanding of the practical and theoretical knowledge necessary to be qualified for an entry level position in government or cultural resource management (CRM). Participants must complete the entire training program with emphases in field survey, excavation, and laboratory methods. All three areas of the certificate program include practical experience in the field and lab with academic and/or professional evaluations that include appropriate readings and examinations.

Graduate study in anthropology is offered in areas such as American Indian studies, prehistoric and historical archaeology, sociocultural anthropology, and physical anthropology. The program offers both a thesis and a non-thesis M.A. Both programs include class work, seminars, directed studies, independent research, and a thesis (with public defense) or final project. The curriculum provides sound training in general anthropology, archaeology, physical anthropology, and ethnology. Departmental research specialties include historical archaeology, prehistoric Plateau archaeology, Plateau Indian ethnography, contemporary American culture, human evolution, and indigenous peoples of South America. Anthropologists in the department also regularly collaborate with the university's history department in support of a joint Ph.D. degree in history with an emphasis on historical archaeology. Graduates of the M.A. program have successfully gone on to pursue additional graduate work and professional careers in anthropology. Interested students should contact the department for the application procedures.

Questions concerning the department and its programs should be addressed to the department chair (208-885-6751).

Majors

- Anthropology (B.A. or B.S.) (p. 313)
- Criminology (B.S.) (p. 316)
- Sociology (B.A. or B.S.) (p. 318)

Minors

- Africana Studies Minor (p. 312)
- Anthropology Minor (p. 315)
- Sociology Minor (p. 320)

Certificates

- Archaeological Technician Undergraduate Academic Certificate (p. 315)
- Equity and Justice Undergraduate Academic Certificate (p. 317)

Culture, Society and Justice Graduate Program

- Anthropology (M.A.) (p. 314)

Africana Studies Minor

Code	Title	Hours
IS 426	Seminar in Africana Studies	3
Select one course in Contemporary Race Relations:		3
HIST 213	Race and Ethnicity through the Ages	
SOC 427	Racial and Ethnic Relations	
Select 12 additional elective credits from the following two lists of Humanities-based and Social Science-based courses, with at least 3 credits from each list:		12
Humanities:		
COMM 335	Intercultural Communication	
EDCI 302	Teaching Culturally Diverse Learners	
ENGL 380	U.S. Ethnic Literature	
ENGL 383	African American Literature	
ENGL 385	World Literature	
FLEN 313	French/Francophone Literature in Translation	
FLEN 315	French/Francophone Cinema in Translation	
HIST 213	Race and Ethnicity through the Ages	
HIST 310	The Civil War and Reconstruction	
HIST 315	Comparative African-American Cultures	
HIST 331	The Age of African Empires	
HIST 441	Slavery and Freedom in the Americas	
MUSA 365	Chamber Ensemble ((World Beats only))	
MUSH 201	History of Rock and Roll	
MUSH 410	Studies in Jazz History	
MUSH 420	Studies in World Music	
Social Science:		
ANTH 261	Language and Culture	
ANTH 462	Human Issues in International Development	
CRIM 334	Policing	
CRIM 439	Inequalities in the Justice System	
IS 325	The Contemporary Muslim World	
IS 326	Africa Today	

IS 370	African Community, Culture, and Music
IS 384	African Politics
or POLS 384	African Politics
IS 498	Internship
LAS 462	Human Issues in International Development
POLS 480	Politics of Development
SOC 340	Environmental Sociology and Globalization
SOC 427	Racial and Ethnic Relations
SOC 465	Environmental Justice
Total Hours	18

Courses to total 18 credits for this minor

Anthropology (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for either the B.A. or B.S. degree, and:

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
ANTH 101	Biological Anthropology	3
ANTH 102	Cultural Anthropology	3
ANTH 103	Introduction to Archaeology	3
ANTH 261	Language and Culture	3
SOC 101	Introduction to Sociology	3
Field Methods Requirement: ¹		3-6
ANTH 409	Anthropological Field Methods	
Select one upper-division Archaeology course from the following:		3
ANTH 350	Food, Culture, and Society	
ANTH 425	Popular Culture and Consumerism	
ANTH 430	Archaeological History, Ethics, and Theory	
ANTH 431	Historical Archaeology	
ANTH 432	Historical Artifact Analysis	
ANTH 433	Applied Cultural Resource Management	
ANTH 434	Stranger than Fiction: Pseudoarchaeology and Myths of the Past	
ANTH 449	Lithic Technology	
Select one upper-division Biological Anthropology course from the following:		3
ANTH 442	Human Osteology and Osteometry	3
ANTH 411	Human Evolution	
ANTH 444	Health, Illness, and Society	3
ANTH 451	Forensic Anthropology	
ANTH 452	Bioarchaeology	
ANTH 456	Anthropology of Modern War and Conflict	
Select one upper-division Cultural Anthropology course from the following:		3
AIST 445	Indigenous Ways of Knowing	3
AIST 411	Native American Architecture	
ANTH 314	Tribal Sovereignty and Federal Policy	
ANTH 321	Tribal Elders Series	
ANTH 327	Belief Systems	
ANTH 329	Contemporary North American Indians	

ANTH 420	Anthropological History and Theory
ANTH 422	Contemporary Pacific Northwest Indians
ANTH 428	Social and Political Organization
ANTH 462	Human Issues in International Development
ANTH 463	Contemporary Issues Affecting Men & Masculinities
SOC 427	Racial and Ethnic Relations
Select one Theory course from the following:	3
ANTH 420	Anthropological History and Theory
ANTH 430	Archaeological History, Ethics, and Theory
Select one Methodology course from the following:	3
ANTH 416	Qualitative Social Science Methods
ANTH 417	Social Data Analysis
Senior Capstone Requirement:	3
ANTH 455	Anthropology Senior Research
Select 12 credits of ANTH or AIST electives, with at least 6 credits coming from upper division course offerings, as approved by student's advisor ²	12
Total Hours	60-63

¹

Three credits of field methods are required. Although students can fulfill their field methods requirement through the University of Idaho, it can also be fulfilled by attending an anthropological or archaeological field school from a fellow institution.

²

No more than 3 credits per course may be counted towards the major with the exception of ANTH 400, ANTH 403, ANTH 404, ANTH 495, ANTH 409, ANTH 498, and ANTH 499.

Courses to total 120 credits for this degree

Anthropology (B.A.)

Fall Term 1		Hours
ANTH 100	Introduction to Anthropology	3
ENGL 101	Writing and Rhetoric I	3
SOC 101	Introduction to Sociology	3
Mathematical Ways of Knowing Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		16
Spring Term 1		Hours
ANTH 103	Introduction to Archaeology	3
ENGL 102	Writing and Rhetoric II	3
Oral Communication Course		3
Scientific Ways of Knowing Course		4
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		17
Fall Term 2		Hours
ANTH 102	Cultural Anthropology	3
ANTH 261	Language and Culture	3
Elective Course		3
Elective Course		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		16
Spring Term 2		Hours
ANTH 101	Biological Anthropology	3
American Diversity Course		3
B.A. Course Requirement		3

B.A. Course Requirement	3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Hours	16
Fall Term 3	
B.A. Course Requirement	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
Elective Course	3
ANTH 420 OR ANTH 430	3
Hours	15
Spring Term 3	
UPDV Cultural Anthropology, Elective Course	3
Scientific Ways of Knowing Course	4
Elective Course	3
ANTH 416 OR ANTH 417	3
ANTH 350 OR ANTH 425 OR ANTH 430 OR ANTH 431 OR ANTH 432 OR ANTH 433 OR ANTH 434 OR ANTH 449	3
Hours	16
Fall Term 4	
UPDV ANTH or AIST, Major Elective Course	3
UPDV ANTH or AIST, Major Elective Course	3
Elective Course	3
ANTH 411 OR ANTH 444 OR ANTH 451 OR ANTH 452 OR ANTH 456	3
Hours	12
Spring Term 4	
ANTH 455 Anthropology Senior Research	3
ANTH 409 Anthropological Field Methods	3
UPDV ANTH or AIST, Major Elective Course	3
UPDV ANTH or AIST, Major Elective Course	3
Hours	12
Total Hours	120

Anthropology (B.S.)

	Hours
Fall Term 1	
ANTH 100 Introduction to Anthropology	3
ENGL 101 Writing and Rhetoric I	3
SOC 101 Introduction to Sociology	3
Oral Communication Course	3
Mathematical Ways of Knowing Course	3
Hours	15
Spring Term 1	
ANTH 103 Introduction to Archaeology	3
ENGL 102 Writing and Rhetoric II	3
Scientific Ways of Knowing Course	4
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	2
Hours	15
Fall Term 2	
ANTH 102 Cultural Anthropology	3
ANTH 261 Language and Culture	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
Elective Course	3
Hours	15
Spring Term 2	
ANTH 101 Biological Anthropology	3
B.S. Course Requirement	3
Scientific Ways of Knowing Course	4
Elective Course	3
Elective Course	3
Hours	16

Fall Term 3	
B.S. Course Requirement	3
UPDV Anthropology, Major Elective Course	3
UPDV Anthropology, Major Elective Course	3
Elective Course	3
ANTH 420 OR ANTH 430	3
Hours	15
Spring Term 3	
UPDV Cultural Anthropology, Major Elective Course	3
B.S. Course Requirement	3
Elective Course	3
ANTH 416 OR ANTH 417	3
ANTH 350 OR ANTH 425 OR ANTH 430 OR ANTH 431 OR ANTH 432 OR ANTH 433 OR ANTH 434 OR ANTH 449	3
Hours	15
Fall Term 4	
UPDV ANTH or AIST, Major Elective Course	3
UPDV ANTH or AIST, Major Elective Course	3
B.S. Course Requirement	3
Elective Course	3
ANTH 411 OR ANTH 444 OR ANTH 451 OR ANTH 452 OR ANTH 456	3
Hours	15
Spring Term 4	
ANTH 455 Anthropology Senior Research	3
ANTH 409 Anthropological Field Methods	3
UPDV ANTH or AIST, Major Elective Course	3
UPDV ANTH or AIST, Major Elective Course	3
Elective Course	2
Hours	14
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Seniors will understand and apply anthropological research methods to a project involving a synthesis of the student's undergraduate anthropological coursework.
2. Students will understand anthropological history and theory and will be able to apply theory to anthropological issues.
3. Students will engage in professional and experiential learning outside of the classroom.
4. Students will understand and explain cultural and human diversity.

Anthropology (M.A.)

Master of Arts. Major in Anthropology.

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Sociology & Anthropology. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each M.A. degree.

Course work will include either 30 credits plus a foreign language proficiency examination or 36 credits and no foreign language requirement.

Students who did not take at least one course in cultural anthropology, biological anthropology, and archaeology and at least one course in qualitative or quantitative social science methodologies as an undergraduate will be asked to do so (in consultation with an advisor) at the beginning of their graduate programs. No graduate credit will be awarded for courses taken to satisfy such deficiencies.

A minimum of 18 credits must be at the 500-level. Anthropology courses must be at the 400- or 500-level (cross-listed courses 400-level/500-level courses must be taken at the 500-level), while supporting courses can include 300-level.

No more than 12 credits can be transferred from other institutions, and an official copy of the student's transcripts from each institution must be on file in the Registrar's Office. Such institutions must have a graduate program, and the work must have been taken for graduate credit.

Students who have already received credit for any core course or an equivalent will not need to retake the course but will substitute appropriate courses with approval from their advisor.

Thesis Option

Thesis students must demonstrate competence in the four subfields of anthropology. The thesis option M.A. core courses along with the expected undergraduate preparation (or courses taken as deficiencies as a graduate student) are designed for this purpose.

Thesis students complete the core courses, supporting fields, and anthropology electives, and thesis credits.

Code	Title	Hours
ANTH 500	Master's Research and Thesis	6-10
ANTH 521	Contemporary Issues in Anthropological Theory	3
ANTH 570	Materiality and Human Cultures	3
ANTH 571	Cultural Complexity	3
ANTH 572	Topics in Biological Anthropology	3
Select one History and Theory course from the following:		3
ANTH 420	Anthropological History and Theory	
ANTH 530	Archaeological History, Ethics, and Theory	

Select up to 9 credits of electives in anthropology or supporting fields 3-9 in consultation with graduate committee chair. At least 3 credits must be 400-500 level Anthropology courses.

Note: Coursework will include either 30 credits plus a foreign language proficiency examination or 36 credits and no foreign language requirement.

Non-thesis option.

Non-thesis students complete the core courses, a field school or internship, supporting fields electives, anthropology electives, non-thesis credits, and select one sub-field emphasis.

Code	Title	Hours
ANTH 521	Contemporary Issues in Anthropological Theory	3
ANTH 599	Non-thesis Master's Research	1-5
Select one History and Theory course from the following:		3
ANTH 420	Anthropological History and Theory	
ANTH 530	Archaeological History, Ethics, and Theory	
Select one Graduate Seminar from the following:		3
ANTH 570	Materiality and Human Cultures	

ANTH 571	Cultural Complexity	
ANTH 572	Topics in Biological Anthropology	
Select up to 6 credits in Field School or Internship: ¹		1-6
ANTH 509	Anthropological Field Methods	
ANTH 598	Internship	

Select up to 15 credits in non-thesis subfield emphasis or supporting 9-15 fields in consultation with graduate committee chair. At least 6 credits must be 400- to 500-level Anthropology courses.

Note: Coursework will include either 30 credits plus a foreign language proficiency examination or 36 credits and no foreign language requirement.

¹

Although students can fulfill their field methods and internship requirement through the University of Idaho, it can also be fulfilled by attending an anthropological or archaeological field school from a fellow institution.

1. Students will demonstrate understanding of current anthropological methods and theories.
2. Students will demonstrate the ability to produce and communicate the results of original research.
3. Students will engage in professional and experiential learning related to anthropology outside of the classroom.

Anthropology Minor

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
Select two courses from the following:		6
ANTH 101	Biological Anthropology	
ANTH 102	Cultural Anthropology	
ANTH 103	Introduction to Archaeology	
Select 9 credits of upper-division ANTH or AIST electives, including at least one 400-level course		9
Total Hours		18

Courses to total 18 credits for this minor

Archaeological Technician Undergraduate Academic Certificate

A minimum overall 3.00 GPA and a grade of 'B' or higher is required in all coursework for this academic certificate.

Code	Title	Hours
Field School Requirement: ¹		3-6
ANTH 409	Anthropological Field Methods ¹	
Archaeological Ethics Requirement:		3
ANTH 430	Archaeological History, Ethics, and Theory	
Select 6 credits of electives from the following:		6
ANTH 350	Food, Culture, and Society	
ANTH 425	Popular Culture and Consumerism	
ANTH 431	Historical Archaeology	
ANTH 432	Historical Artifact Analysis	
ANTH 433	Applied Cultural Resource Management	

ANTH 434	Stranger than Fiction: Pseudoarchaeology and Myths of the Past
ANTH 449	Lithic Technology
ANTH 452	Bioarchaeology
ANTH 456	Anthropology of Modern War and Conflict
GEOG 385	Foundations of GIS
GEOL 101 & 101L	Physical Geology and Physical Geology Lab
GEOL 335	Geomorphology
HIST 342	Alexander the Great and the Hellenistic World
HIST 344	The Roman Empire
HIST 461	Idaho and the Pacific Northwest
HIST 462	History of the American West
STAT 251	Statistical Methods

Total Hours 12-15

Courses to total 12 credits for this certificate

1

Three credits required. Although students can fulfill their field school requirement through the University of Idaho, it can also be fulfilled by attending a field school from a fellow institution.

1. Students will demonstrate field experience.
2. Students will demonstrate the ability to identify and analyze particular classes of material culture and understand basic laboratory procedures and processes.
3. Students will apply learned knowledge through presentation of scholarship and participation in a professional meeting. Students will be expected to share the results of their field and/or laboratory work through research presentation.

Criminology (B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following courses:

Code	Title	Hours
Criminology Core:		
CRIM 101	Introduction to Criminology	3
CRIM 201	Justice Institutions	3
CRIM 301	Criminological Theory	3
PHIL 103	Introduction to Ethics	3
Research Methods - Select one of the following:		3
CRIM 302	Research Methods in Criminology	
SOC 309	Social Science Research Methods	
SOC 416	Qualitative Social Science Methods	
SOC 417	Social Data Analysis	
Inequalities and Diversity - Select one of the following:		3
CRIM 421	Gender and Crime	
CRIM 439	Inequalities in the Justice System	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
Capstone - Select one of the following:		3
CRIM 461	Capstone: Justice Policy Issues	
CRIM 462	Senior Practicum	

CRIM 464	Criminology Abroad	
Electives - Select 15 additional credits from the following (not taken above, at least 12 credits must be CRIM):		15
AIST 453	Tribal Sovereignty and Federal Policy	3
ANTH 451	Forensic Anthropology	
ANTH 456	Anthropology of Modern War and Conflict	
CRIM 340	Sex Crimes	
CRIM 320	Deviant Behavior	
CRIM 325	Family Violence	
CRIM 329	Homicide	
CRIM 330	Juvenile Delinquency	
CRIM 332	Punishment and Corrections	
CRIM 333	Elite and White Collar Crime	
CRIM 334	Policing	
CRIM 335	Terrorism & Counterterrorism	
CRIM 336	Comparative Criminal Justice Systems	
CRIM 337	Violent Crime	
CRIM 338	Vice Crime	
CRIM 339	Crime and the Media	
CRIM 340	Sex Crimes	
CRIM 344	Criminology and Video Games	
CRIM 404	Special Topic	
CRIM 415	Citizen's Police Academy	
CRIM 420	Substance Use and Crime	
CRIM 421	Gender and Crime	
CRIM 435	Psychopathy and Crime	
CRIM 436	Mental Health and Crime	
CRIM 439	Inequalities in the Justice System	
CRIM 466	Inside Out	
CRIM 498	Internship	
CRIM 499	Directed Study	
SOC 345	Extremism and American Society	
SOC 346	Responding to Risk	
SOC 420	Sociology of Law	
SOC 427	Racial and Ethnic Relations	
SOC 465	Environmental Justice	
Select two of the following allied Social Science courses:		6
ANTH 100	Introduction to Anthropology	
ANTH 101	Biological Anthropology	
ANTH 102	Cultural Anthropology	
HIST 111	United States History I	
POLS 101	American National Government	
PSYC 101	Introduction to Psychology	
SOC 101	Introduction to Sociology	
SOC 201	Introduction to Inequity and Justice	
Math or Statistics - Select one of the following:		3
MATH 123	Math in Modern Society	
STAT 153	Introduction to Statistical Reasoning	
STAT 251	Statistical Methods	

Total Hours 48

Courses to total 120 credits for this degree

Fall Term 1		Hours
CRIM 101	Introduction to Criminology	3
ENGL 101	Writing and Rhetoric I	3
MATH 123 OR STAT 153 OR STAT 251		3
Allied Social Science, Major Elective Course		3
Elective Course		3
Hours		15
Spring Term 1		Hours
CRIM 201	Justice Institutions	3
ENGL 102	Writing and Rhetoric II	3
SOC 101	Introduction to Sociology	3
Scientific Ways of Knowing Course		4
Oral Communication Course		3
Hours		16
Fall Term 2		Hours
PSYC 101	Introduction to Psychology	3
PHIL 103	Introduction to Ethics	3
Criminology elective, Major Elective Course		3
Scientific Ways of Knowing Course		4
Elective Course		2
Hours		15
Spring Term 2		Hours
Humanistic and Artistic Ways of Knowing Course		3
B.S. Course Requirement		3
American Diversity Course		3
Allied Social Science, Major Elective Course		3
Elective Course		3
Hours		15
Fall Term 3		Hours
CRIM 301	Criminological Theory	3
International Course		3
B.S. Course Requirement		3
Elective Course		3
CRIM 302 OR SOC 309 OR SOC 416 OR SOC 417		3
Hours		15
Spring Term 3		Hours
Criminology elective, Major Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
CRIM 421 OR CRIM 439 OR SOC 424 OR SOC 427		3
Hours		15
Fall Term 4		Hours
Criminology, Major Elective Course		3
Criminology, Major Elective Course		3
B.S. Course Requirement		3
Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		Hours
CRIM 461 OR CRIM 462 OR CRIM 464		3
Criminology, Major Elective Course		3
B.S. Course Requirement		3
Elective Course		3
Elective Course		2
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of

your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will demonstrate an understanding of the origins of criminal behavior, society's response to crime, and the consequences of crime to our society, utilizing multiple theoretical perspectives.
2. Students will demonstrate knowledge of methodological approaches used by social scientists to understand crime and crime control.
3. Students will analyze and interpret the diversity of social experience associated with criminology and society, especially as they relate to race, class, gender, gender identity and expression, age, sexual preference, religion and nationality.
4. Students will articulate the ethical and social implications of justice and criminology.

Equity and Justice Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (0-10-a (p. 94)).

Code	Title	Hours
Academic Exploration Component		
SOC 201	Introduction to Inequity and Justice	3
Select 6 credits of upper-division emphasis electives from the following:		6
AIST 210	Native Identities	
AIST/HIST 316	American Indian History	
AIST 320	Native American & Indigenous Film	
AIST 435	Tribal Elders Series	
AIST 445	Indigenous Ways of Knowing	
AIST 484	Native American and Indigenous Literature	
AMST 301	Studies in American Culture	
ANTH 327	Belief Systems	
ANTH/AIST 329	Contemporary North American Indians	
ANTH 444	Health, Illness, and Society	
ANTH/AIST/RELS 422	Contemporary Pacific Northwest Indians	
ANTH 462	Human Issues in International Development	
ANTH 463	Contemporary Issues Affecting Men & Masculinities	
COMM 335	Intercultural Communication	
COMM 410	Conflict Management	
COMM 432	Gender and Communication	
CRIM 421	Gender and Crime	
CRIM 439	Inequalities in the Justice System	
EDCI 302	Teaching Culturally Diverse Learners	
ENGL 380	U.S. Ethnic Literature	
ENGL 382	Queer Literature	
ENGL 383	African American Literature	
ENGL 384	Native American and Indigenous Literature	

ENGL 385	World Literature
ENGL 481	Women's Literature
HIST 212	Sex and Gender through the Ages
HIST 213	Race and Ethnicity through the Ages
HIST 315	Comparative African-American Cultures
HIST 316	American Indian History
HIST 420	History of Women in American Society
HIST 438	Modern Mexico and the Americas
HIST 439	Modern Latin America
HIST 440	Social Revolution in Latin America
HIST 441	Slavery and Freedom in the Americas
HIST 464	Gender and Race in the American West
IS 426	Seminar in Africana Studies
IS 370	African Community, Culture, and Music
IS 326	Africa Today
JAMM 340	Media and Diversity
JAMM 446	Women in the Media
JAMM 490	Issues in Global Media
LAS 306	Culture and Institutions of Latin America
LAS 391	Hispanic Film
LAS 394	Latin American Literature in Translation
LAS 409	Modern Latin American Society
LAS 422	Mexican Culture through Cinema
LAS 438	Modern Mexico and the Americas
LAS 439	Modern Latin America
MUSH 410	Studies in Jazz History
PHIL 408	Feminism and Philosophy
POLS 423	Politics, Policy and Gender
PSYC 315	Psychology of Women
PSYC 330	Human Sexuality
PSYC 419	Adult Development and Aging
SOC 327	Sociology of the Family
SOC 340	Environmental Sociology and Globalization
SOC 423	Economic (In)Justice in the United States
SOC 424	Sociology of Gender
SOC 427	Racial and Ethnic Relations
SOC 465	Environmental Justice
THE 453	Topics in World Theatre History
THE 455	Theatre for Social Change
THE 456	Studies in Theatre, Gender, and Sexuality
WGSS 367	Topics in Women's, Gender, and Sexuality Studies
WGSS 410	Feminist Theory and Action
Application Component Electives	
Select 3 credits, no more than 6 credits can apply to this certificate. 3	
ANTH 203	Workshop
ANTH 403	Workshop
SOC 203	Workshop
SOC 403	Workshop
WGSS 498	Internship in Women's, Gender, and Sexuality Studies

Total Hours 12

Courses to total 12 credits for this certificate

Sociology (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for either the B.A. or B.S. degree and the following courses (electives must be approved by the student's advisor):

Code	Title	Hours
ANTH 100	Introduction to Anthropology	3
or ANTH 102	Cultural Anthropology	
SOC 101	Introduction to Sociology	3
SOC 201	Introduction to Inequity and Justice	3
SOC 211	Development of Social Theory	3
STAT 153	Introduction to Statistical Reasoning	3
or STAT 251	Statistical Methods	
Select one course from the following:		3
SOC 309	Social Science Research Methods	
SOC 416	Qualitative Social Science Methods	
SOC 417	Social Data Analysis	
Select one course from the following:		3
ANTH 463	Contemporary Issues Affecting Men & Masculinities	
CRIM 421	Gender and Crime	
CRIM 439	Inequalities in the Justice System	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
Select 9 credits in related fields in the following subjects: AIST, AFST, ANTH, CRIM, ECON, ENVS, FREN, GEOG, GERM, HIST, IS, POLS, PSYC, SPAN, STAT, and WGSS ¹		9
Select one of the following:		3
SOC 460	Capstone: Sociology in Action	
SOC 462	Senior Practicum	
18 upper-division sociology electives		18
Total Hours		51

Courses to total 120 credits for this degree

If students prefer an area of concentration to organize those additional 18 credits, they may select from one of the following lists:

A. Inequalities and Social Action

Code	Title	Hours
Select one of the following:		3
ANTH 463	Contemporary Issues Affecting Men & Masculinities	
CRIM 421	Gender and Crime	
CRIM 439	Inequalities in the Justice System	
SOC 423	Economic (In)Justice in the United States	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations (Course is being added: ANTH 463: Contemp Issues in Masculinity)	
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	

Select one of the following: 3

AIST 422	Contemporary Pacific Northwest Indians
AIST 435	Tribal Elders Series
AIST 445	Indigenous Ways of Knowing
AIST 453	Tribal Sovereignty and Federal Policy
ANTH 462	Human Issues in International Development

Select four additional courses from the following: 12

AIST 422	Contemporary Pacific Northwest Indians
ANTH 462	Human Issues in International Development
CRIM 320	Deviant Behavior
CRIM 335	Terrorism & Counterterrorism
CRIM 336	Comparative Criminal Justice Systems
CRIM 421	Gender and Crime
CRIM 439	Inequalities in the Justice System
SOC 327	Sociology of the Family
SOC 340	Environmental Sociology and Globalization
SOC 341	Science, Technology, and Society
SOC 343	Power, Politics, and Society
SOC 344	Understanding Communities
SOC 345	Extremism and American Society
SOC 346	Responding to Risk
SOC 350	Food, Culture, and Society
SOC 351	Animals in Society
SOC 372	Love and Liberation
SOC 403	Workshop
SOC 404	Special Topics
SOC 420	Sociology of Law
SOC 423	Economic (In)Justice in the United States
SOC 424	Sociology of Gender
SOC 427	Racial and Ethnic Relations
SOC 444	Health, Illness, and Society
SOC 465	Environmental Justice
SOC 466	Climate Change and Society
SOC 498	Internship (no more than 6 credits)
SOC 499	Directed Study (no more than 6 credits)
WGSS 498	Internship in Women's, Gender, and Sexuality Studies (no more than 3 credits)

Total Hours 18

B. Environment, Science and Society

Code	Title	Hours
Select one of the following: 3		
SOC 340	Environmental Sociology and Globalization	
SOC 341	Science, Technology, and Society	
SOC 344	Understanding Communities	

Select one of the following: 3

AIST 453	Tribal Sovereignty and Federal Policy
AIST 435	Tribal Elders Series
AIST 445	Indigenous Ways of Knowing
AIST 422	Contemporary Pacific Northwest Indians
ANTH 462	Human Issues in International Development

Select four additional courses from the following: 12

AIST 422	Contemporary Pacific Northwest Indians
ANTH 462	Human Issues in International Development
SOC 340	Environmental Sociology and Globalization
SOC 341	Science, Technology, and Society
SOC 343	Power, Politics, and Society
SOC 345	Extremism and American Society
SOC 346	Responding to Risk
SOC 350	Food, Culture, and Society
SOC 351	Animals in Society
SOC 372	Love and Liberation
SOC 403	Workshop
SOC 404	Special Topics
SOC 420	Sociology of Law
SOC 423	Economic (In)Justice in the United States
SOC 424	Sociology of Gender
SOC 427	Racial and Ethnic Relations
SOC 444	Health, Illness, and Society
SOC 465	Environmental Justice
SOC 466	Climate Change and Society
SOC 498	Internship (no more than 6 credits)
SOC 499	Directed Study (no more than 6 credits)

Total Hours 18

Sociology (B.A.)

Fall Term 1	Hours	
SOC 101	Introduction to Sociology	3
ENGL 101	Writing and Rhetoric I	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		2
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		15

Spring Term 1	Hours	
ENGL 102	Writing and Rhetoric II	3
ANTH 100	Introduction to Anthropology	3
or ANTH 102	or Cultural Anthropology	
Scientific Ways of Knowing Course		4
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		14

Fall Term 2	Hours	
SOC 201	Introduction to Inequity and Justice	3
Scientific Ways of Knowing Course		4
Approved Elective, Major Elective Course		3
1 credit Elective Course		1
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		15

Spring Term 2	Hours	
STAT 153	Introduction to Statistical Reasoning	3
or STAT 251	or Statistical Methods	
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Approved Elective, Major Elective Course		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Hours		16

Fall Term 3	Hours	
SOC 211	Development of Social Theory	3
Related Fields, Major Elective Course		3
Approved Elective, Major Elective Course		3
Elective Course		3

Elective Course	3
Hours	15
Spring Term 3	
Approved Elective, Major Elective Course	3
International Course	3
B.A. Course Requirement	3
Elective Course	3
ANTH 463 OR CRIM 421 OR CRIM 439 OR SOC 423 OR SOC 424 OR SOC 427	3
Hours	15
Fall Term 4	
Related Fields, Major Elective Course	3
B.A. Course Requirement	3
Approved Elective, Major Elective Course	3
SOC 460 OR SOC 462	3
SOC 309 OR SOC 416 OR SOC 417	3
Hours	15
Spring Term 4	
Approved Elective, Major Elective Course	3
Related Field, Major Elective Course	3
B.A. Course Requirement	3
Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

Sociology (B.S.)

	Hours
Fall Term 1	
SOC 101 Introduction to Sociology	3
ENGL 101 Writing and Rhetoric I	3
ANTH 100 Introduction to Anthropology or ANTH 102 or Cultural Anthropology	3
Oral Communication Course	2
Mathematical Ways of Knowing Course	3
Hours	14
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
SOC 201 Introduction to Inequity and Justice	3
Scientific Ways of Knowing Course	4
Elective Course	3
Elective Course	2
Hours	15
Fall Term 2	
Elective Course	3
Elective Course	3
Scientific Ways of Knowing Course	4
Approved Elective, Major Elective Course	3
B.S. Course Requirement	3
Hours	16
Spring Term 2	
STAT 153 Introduction to Statistical Reasoning or STAT 251 or Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
Related Fields, Major Elective Course	3
Approved Elective, Major Elective Course	3
Hours	15
Fall Term 3	
SOC 211 Development of Social Theory	3
Humanistic and Artistic Ways of Knowing Course	3
Related Fields, Major Elective Course	3
Approved Elective, Major Elective Course	3

Elective Course	3
Hours	15
Spring Term 3	
Approved Elective, Major Elective Course	3
Elective Course	3
International Course	3
B.S. Course Requirement	3
ANTH 463 OR CRIM 421 OR CRIM 439 OR SOC 423 OR SOC 424 OR SOC 427	3
Hours	15
Fall Term 4	
Related Fields, Major Elective Course	3
B.S. Course Requirement	3
Elective Course	3
SOC 460 OR SOC 462	3
SOC 309 OR SOC 416 OR SOC 417	3
Hours	15
Spring Term 4	
Approved Elective, Major Elective Course	3
B.S. Course Requirement	3
Elective Course	3
Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will demonstrate their comprehension of and ability to apply research methods used in the social sciences.
2. Students will demonstrate a working knowledge of the leading sociological theories.
3. Graduating seniors will demonstrate a working knowledge of the dominant forms of social inequality.

Sociology Minor

Code	Title	Hours
SOC 101	Introduction to Sociology	3
SOC 211	Development of Social Theory	3
Select one of the following research methods courses:		3
ANTH/SOC 416	Qualitative Social Science Methods	
ANTH/SOC 417	Social Data Analysis	
PSYC 218	Introduction to Research in the Behavioral Sciences	
HIST 290	The Historian's Craft	
HIST 300	Digital History	
POLS 235	Political Research Methods and Approaches	
SOC 309	Social Science Research Methods	
Select courses from the following:		12
CRIM 325	Family Violence	
CRIM 335	Terrorism & Counterterrorism	

CRIM 337	Violent Crime
CRIM 439	Inequalities in the Justice System
SOC 201	Introduction to Inequity and Justice
SOC 327	Sociology of the Family
SOC 340	Environmental Sociology and Globalization
SOC 341	Science, Technology, and Society
SOC 343	Power, Politics, and Society
SOC 344	Understanding Communities
SOC 345	Extremism and American Society
SOC 346	Responding to Risk
SOC 350	Food, Culture, and Society
SOC 351	Animals in Society
SOC 372	Love and Liberation
SOC 403	Workshop
SOC 404	Special Topics
SOC 416	Qualitative Social Science Methods
SOC 417	Social Data Analysis
SOC 423	Economic (In)Justice in the United States
SOC 424	Sociology of Gender
SOC 427	Racial and Ethnic Relations
SOC 465	Environmental Justice
SOC 498	Internship (No more than 6 credits may be counted toward this minor.)
SOC 499	Directed Study (No more than 6 credits may be counted toward this minor.)
Total Hours	21

Courses to total 21 credits for this minor

Department of English

Tara MacDonald, Acting Department Chair (200 Carol Ryrie Brink Hall 83844-1102; phone 208-885-6156; englishdept@uidaho.edu).

English majors develop skills in the fundamentals of English composition, creative writing, textual interpretation, and critical thinking. Students apply these skills across diverse areas of study, including linguistics and literacy, technical and business writing, literary criticism and theory, Anglophone and world literatures, film and cultural studies, expository and creative writing, and pedagogy. Students write extensively in all courses and gain speaking experience through oral reports, presentations, and class discussions. International students must have a TOEFL score of 560 or above.

The Department of English encourages students to plan their curricula according to personal and career goals. Aspiring writers emphasize creative writing courses; future teachers of English as a Second Language (ESL) study linguistics; pre-professionals take advanced writing and career-related courses. Those heading for graduate school in literature, linguistics, or ESL choose courses that prepare them for graduate study in their area. English majors who intend to teach English in secondary schools plan their program to satisfy state certification requirements (see "Secondary School Teaching Certification for Majors Outside the College of Education (p. 202)" in the College of Education (p. 202) section).

To enable students to focus on such interests within a coherent program of study, the English Department offers the choice of five emphases

within the major: creative writing, linguistics and literacy, literature, professional writing, and teaching.

The Department of English offers two graduate degrees at the master's level: the M.F.A. and the M.A. Through course selection and choice of thesis topic, and with the approval of appropriate faculty members, students pursuing the M.A. may emphasize literary studies or studies in composition/rhetoric. Through course selection and choice of thesis topic, and with the approval of appropriate faculty members, those pursuing the M.F.A. may emphasize fiction, poetry, or creative nonfiction. The M.F.A. also offers students the tools to work and teach as literary writers. Students planning to work for the M.F.A. or M.A. should be well prepared through the curriculum outlined below.

The graduate programs in English allow students to develop specialized skills in creative writing; scholarly research and critical writing in the field of literature; and linguistics. All areas of specialization prepare students to write publishable manuscripts, ranging from articles for peer-reviewed scholarly journals to full-length books for trade publishing houses. The graduate programs in English serve those who plan to teach English at the college level, secondary educators pursuing teaching certificates or credentials, writers and editors interested in editorial or publishing work, and those seeking employment in the private sector. All graduate degrees offered in English prepare students to pursue doctoral degrees in their respective fields.

For admission to the graduate program in English, the student must have a bachelor's degree with a major in English or equivalent preparation and should have an overall grade-point average of 3.00 (on a 4.00 scale) to be granted full admission. Non-native speakers of English must score at least 560 on the TOEFL exam.

Majors

- English (B.A.) (p. 322)
- English (B.S.) (p. 324)

Minors

- Creative Writing Minor (p. 322)
- English Minor (p. 326)
- Professional Writing Minor (p. 326)
- Teaching English as a Second Language Minor (p. 326)

Certificates

- Technical Writing Academic Certificate (p. 327)

English Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of English. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- English (M.A.) (p. 325)
- Creative Writing (M.F.A.) (p. 322)

Creative Writing (M.F.A.)

Master of Fine Arts. Major in Creative Writing.

The M.F.A. is the terminal degree for those wishing to teach creative writing at the college or university level; it is also among the credentials expected of those seeking employment in arts administration, editing, and related fields. The curriculum provides theoretical and practical training in fiction, poetry, creative nonfiction, and editing and publishing.

The program's principle aim is to teach aspiring writers their craft and at the highest possible level. We gladly speak to students about publishing their work, or about teaching or editing, but our first concern is teaching and learning the craft of writing. While we encourage applicants to apply only in one genre, once they are admitted, we encourage them to cross-pollinate: we like to see poets working on narrative pacing in a fiction or nonfiction class, and we like to see prose writers attentive to individual syllables in poetry. We encourage students to experiment and to push themselves in new directions. We also insist that they know where they fit in the continuum of writers, and that they understand and can speak with conviction of where they might place themselves in any of several literary traditions.

A minimum of four semesters in residence is required in addition to the following:

Code	Title	Hours
ENGL 500	Master's Research and Thesis	10
Twelve credits of workshops		12
Choose nine credits of techniques/traditions courses		9
ENGL 571	Traditions - Prosody and Forms	
ENGL 572	Traditions - Fiction	
ENGL 573	Traditions - Nonfiction	
ENGL 581	Techniques of Poetry	
ENGL 582	Techniques of Fiction	
ENGL 583	Techniques of Nonfiction	
Nine credits in literature courses		9
Twelve credits of electives relevant to the degree and can come from other departments as agreed upon by the student and MP		12
Two credits in Internship		2
Total Hours		54

Upon completion of the thesis—a collection of poetry, short stories, creative nonfiction, or a novel—in acceptable form, each student will take an oral examination designed to test the student's ability to articulately discuss their creative process, intellectual and creative influences, chosen genre, aesthetic perspective, design, and intent.

Please see the English graduate handbook for details and program requirements on earning the Master of Fine Arts in English degree.

1. Students will produce a substantial work of professional-quality literature in poetry, fiction, and/or nonfiction, exhibiting appropriate genre-specific technical skills, the development of a mature literary form, and the evolution of a distinctive voice and individual aesthetic.

2. Students will analyze their own creative work and situate it within the literary traditions and conventions of their genre(s), and discuss how their work exemplifies, expands, or bridges those boundaries.

3. Students will present their creative work effectively during a public reading (the thesis defense), and in other optional reading environments.

Creative Writing Minor

Code	Title	Hours
ENGL 290	Introduction to Creative Writing	3
Select 15 additional credit from the following:		15
ENGL 391	Intermediate Poetry Writing	
ENGL 392	Intermediate Fiction Writing	
ENGL 393	Intermediate Nonfiction Writing	
ENGL 487	Advanced Creative Writing Techniques	
ENGL 491	Advanced Poetry Writing	
ENGL 492	Advanced Fiction Writing	
ENGL 493	Advanced Nonfiction Writing	
Or equivalent course approved by your advisor, such as Screenwriting (THE 447, ENGL 447, JAMM 447), Playwriting (THE 440), Introduction to Screenwriting (JAMM 231), Modern and Contemporary Poetry (ENGL 461), Traditions and Trends in Fiction (ENGL 462), or Life-Writing and the Essay (ENGL 463)		

Total Hours **18**

Courses to total 18 credits for this minor

English (B.A.)

Where specific courses are listed with the area requirements, the department may approve equivalencies.

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general requirements for the B.A. degree, and the following:

Code	Title	Hours
ENGL 215	Introduction to English Studies	3
ENGL 400	Seminar in Literature and Theory	3
Select 9 credits from the following:		9
ENGL 201	English Grammar: Key Concepts and Terms	
ENGL 202	Technical Writing I	
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 231	Introduction to Screenwriting	
ENGL 241	Introduction to the Study of Language	
ENGL 257	Survey of Western World Literature I	
ENGL 258	Survey of Western World Literature II	
ENGL 267	Survey of British Literature I	
ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	
ENGL 278	Survey of American Literature II	
ENGL 281	Introduction to Women's Literature	
ENGL 290	Introduction to Creative Writing	
ENGL 298	Fugue Internship	
FTV 100	Film History and Aesthetics	
FTV 200	Global Film Styles	
Select 15 credits from the following:		15
ENGL 309	Rhetorical Style	

ENGL 310	Critical Theory
ENGL 313	Business Writing
ENGL 316	Environmental Writing
ENGL 317	Technical Writing II
ENGL 318	Science Writing
ENGL 322	Climate Change Fiction
ENGL 329	Literature and Film
ENGL 345	Shakespeare
ENGL 365	Gothic Literature
ENGL 366	Utopian and Dystopian Literature
ENGL 380	U.S. Ethnic Literature
ENGL 382	Queer Literature
ENGL 383	African American Literature
ENGL 384	Native American and Indigenous Literature
ENGL 385	World Literature
ENGL 391	Intermediate Poetry Writing
ENGL 392	Intermediate Fiction Writing
ENGL 393	Intermediate Nonfiction Writing
Select 12 credits from the following:	12
ENGL 400	Seminar in Literature and Theory
ENGL 401	Writing Workshop for Teachers
ENGL 402	Internship in Tutoring Writing
ENGL 404	Special Topics
ENGL 408	Language Acquisition and Development
ENGL 410/510	Studies in Linguistics
ENGL 419	Writing for the Web
ENGL 444	Sociolinguistics
ENGL 445	Young Adult Literature
ENGL 447	Screenwriting
ENGL 461	Modern and Contemporary Poetry
ENGL 462	Traditions and Trends in Fiction
ENGL 463	Life-Writing and the Essay
ENGL 464	Literature of Oppression and Resistance
ENGL 473	Western American Literature
ENGL 481	Women's Literature
ENGL 482	Major Authors
ENGL 486	Publishing and Editing
ENGL 487	Advanced Creative Writing Techniques
ENGL 491	Advanced Poetry Writing
ENGL 492	Advanced Fiction Writing
ENGL 493	Advanced Nonfiction Writing
ENGL 496	History of the English Language
ENGL 497	Practicum
ENGL 498	Internship
ENGL 499	Directed Study
Select 3 credits from the following:	3
ENGL 440	Professional Writing Portfolio
ENGL 490	Creative & Literary Portfolio

Total Hours **45**

Courses to total 120 credits for this degree

If students prefer an area of concentration, they may select from one of the following lists for 18 of their credits:

Creative Writing

- ENGL 290
- 2-3 courses from ENGL 391, ENGL 392, or ENGL 393
- 2-3 courses from ENGL 487, ENGL 491, ENGL 492, ENGL 493, or ENGL 447

Linguistics

- ENGL 241
- at least one of ENGL 309, ENGL 310, ENGL 313, ENGL 316, ENGL 317, ENGL 318, or ENGL 393
- ENGL 408
- ENGL 410
- ENGL 444
- ENGL 498

Literature

- ENGL 310
- at least one of ENGL 257, ENGL 258, ENGL 267, ENGL 268, ENGL 277, or ENGL 278
- at least two of ENGL 322, ENGL 329, ENGL 345, ENGL 365, ENGL 366, ENGL 380, ENGL 382, ENGL 383, ENGL 384, or ENGL 385
- at least two of ENGL 461, ENGL 462, ENGL 463, ENGL 464, ENGL 473, ENGL 481, or ENGL 482

Professional Writing

- ENGL 202
- at least one of ENGL 207, ENGL 208, ENGL 241, or ENGL 290
- at least two of ENGL 309, ENGL 313, ENGL 316, ENGL 317, ENGL 318
- at least two of ENGL 402, ENGL 419, ENGL 486, ENGL 496, ENGL 498

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
Social and Behavioral Ways of Knowing Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		16
Spring Term 1	Hours	
ENGL 102	Writing and Rhetoric II	3
ENGL 215	Introduction to English Studies	3
Scientific Ways of Knowing Course		4
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		14
Fall Term 2	Hours	
International Course		3
Social and Behavioral Ways of Knowing Course		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Lower Division English Class		3
Lower Division English Class		3
Hours		16
Spring Term 2	Hours	
Lower Division English Class		3

American Diversity Course	3
Scientific Ways of Knowing Course	4
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Upper Division English Class	3
Hours	17
Fall Term 3	
B.A. Course Requirement	3
Elective Course	3
Upper Division English Class	3
Upper Division English Class	3
Upper Division English Class	3
Hours	15
Spring Term 3	
B.A. Course Requirement	3
Elective Course	3
Upper Division English Class	3
Upper Division English Class	3
Upper Division English Class	3
Hours	15
Fall Term 4	
ENGL 400 Seminar in Literature and Theory	3
Elective Course	3
Elective Course	3
Upper Division English Class	3
Upper Division English Class	3
Hours	15
Spring Term 4	
ENGL 440 or 490	3
B.A. Course Requirement	3
Elective Course	3
Elective Course	3
Hours	12
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

L01. Students' writing is stylistically sophisticated, and exhibits correct usage of grammar and of MLA format and citation conventions.

L02. Students can write a research essay that exhibits effective deployment of research as evidence.

L03. Students can write an analytic essay or report that exhibits both critical thinking and effective argumentation.

L04. Students can discern and evaluate the aesthetic and formal qualities of various texts.

L05. Students exhibit knowledge of diverse literatures in English and the cultural and historical contexts in which these works were produced.

English (B.S.)

Required coursework includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic->

<https://catalog.uidaho.edu/general-requirements-baccalaureate-degrees/#j3>)), the general requirements for the B.S. degree, and:

Code	Title	Hours
ENGL 202	Technical Writing I	3
ENGL 440	Professional Writing Portfolio	3
Select 12 credits from the following:		12
ENGL 201	English Grammar: Key Concepts and Terms	
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 231	Introduction to Screenwriting	
ENGL 241	Introduction to the Study of Language	
ENGL 257	Survey of Western World Literature I	
ENGL 258	Survey of Western World Literature II	
ENGL 267	Survey of British Literature I	
ENGL 268	Survey of British Literature II	
ENGL 277	Survey of American Literature I	
ENGL 278	Survey of American Literature II	
ENGL 281	Introduction to Women's Literature	
ENGL 290	Introduction to Creative Writing	
ENGL 298	Fugue Internship	
FTV 100	Film History and Aesthetics	
FTV 200	Global Film Styles	
Select 15 credits from the following:		15
ENGL 309	Rhetorical Style	
ENGL 310	Critical Theory	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
ENGL 320	Grant and Proposal Writing	
ENGL 322	Climate Change Fiction	
ENGL 329	Literature and Film	
ENGL 345	Shakespeare	
ENGL 365	Gothic Literature	
ENGL 366	Utopian and Dystopian Literature	
ENGL 380	U.S. Ethnic Literature	
ENGL 382	Queer Literature	
ENGL 383	African American Literature	
ENGL 384	Native American and Indigenous Literature	
ENGL 385	World Literature	
ENGL 391	Intermediate Poetry Writing	
ENGL 392	Intermediate Fiction Writing	
ENGL 393	Intermediate Nonfiction Writing	
Select 12 credits from the following:		12
ENGL 400	Seminar in Literature and Theory	
ENGL 401	Writing Workshop for Teachers	
ENGL 402	Internship in Tutoring Writing	
ENGL 404	Special Topics	
ENGL 408	Language Acquisition and Development	
ENGL 410	Studies in Linguistics	
ENGL 417	Technical Writing III	
ENGL 418	Visual Perception, Culture, and Rhetoric	

ENGL 419	Writing for the Web
ENGL 444	Sociolinguistics
ENGL 445	Young Adult Literature
ENGL 447	Screenwriting
ENGL 461	Modern and Contemporary Poetry
ENGL 462	Traditions and Trends in Fiction
ENGL 463	Life-Writing and the Essay
ENGL 464	Literature of Oppression and Resistance
ENGL 473	Western American Literature
ENGL 481	Women's Literature
ENGL 482	Major Authors
ENGL 486	Publishing and Editing
ENGL 487	Advanced Creative Writing Techniques
ENGL 491	Advanced Poetry Writing
ENGL 492	Advanced Fiction Writing
ENGL 493	Advanced Nonfiction Writing
ENGL 496	History of the English Language
ENGL 497	Practicum
ENGL 498	Internship
ENGL 499	Directed Study

Total Hours 45

Courses to total 120 credits for this degree

	Hours
Fall Term 1	
ENGL 101 Writing and Rhetoric I	3
Oral Communication	3
Mathematics Course	3
Social Science Course	3
Natural Science Course with Lab	4
Hours	16
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
ENGL 202 Technical Writing I	3
Humanities Course	3
Bachelor of Science Course Requirement	3
Elective	3
Hours	15
Fall Term 2	
Lower-Division English Course	3
Lower-Division English Course	3
Related Field Course	3
Humanities Course	3
Natural Science Course	3-4
Hours	15-16
Spring Term 2	
Lower-Division English Course	3
Lower-Division English Course	3
Related Field Course	3
Natural Science Course with Lab or Core Science	3-4
Elective	3
Hours	15-16
Fall Term 3	
Upper-Division English Course	3
Upper-Division English Course	3
Upper-Division English Course	3
International or American Diversity Course	3

Elective	3
Hours	15
Spring Term 3	
Upper-Division English Course	3
Upper-Division English Course	3
Upper-Division English Course	3
Related Field Course	3
Elective	3
Hours	15
Fall Term 4	
Upper-Division English Course	3
Upper-Division English Course	3
Upper-Division English Course	3
Related Field Course	3
Elective	3
Hours	15
Spring Term 4	
ENGL 440 Professional Writing Portfolio	3
Related Field Course	3
Related Field Course	3
Elective	3
Elective	3
Hours	15
Total Hours	121-123

LO1. Students' writing is stylistically sophisticated and exhibits correct usage of grammar and citation conventions.

LO2. Students can write a research project that exhibits effective deployment of research as evidence.

LO3. Students can write an analytic essay or report that exhibits both critical thinking and effective argumentation.

LO4. Students demonstrate expertise in composing in digital environments, including strategies for evaluating digital writing technologies, composing texts and other multimedia products in online spaces, conducting research in digital environments, and disseminating texts in digital genres.

English (M.A.) Master of Arts. Major in English.

Of the minimum of 33 credits required for the degree, at least 24 credits must be earned in the Department of English at the University of Idaho. Course work for the M.A. in English is normally at the 500s level; however, up to six credits of work at the 400s level may be included, but only with the approval of the student's major professor and the department's director of graduate studies. Students are allowed to take 3 credits maximum in practica applying toward the degree.

Thesis and Non-Thesis Options:

Students in the M.A. have two options from which to choose.

The thesis option requires 27 credits of coursework and 6 thesis credits, leading to the submission of an acceptable thesis of 60 pages or more. See the College of Graduate Studies (p. 292) "Graduate Handbook for Thesis and Dissertation."

The non-thesis (master's project) option requires 30 credits of coursework and 3 non-thesis credits (ENGL 599). The student works with a faculty member to produce a revised seminar paper suitable

to be submitted for publication, an abstract for the paper, a concise explanation of initial and additional research and revisions (3-5 pages), and a substantial annotated bibliography of work in the field.

For the thesis and non-thesis options, each student will take an oral M.A. examination following completion of work submitted in acceptable form, as confirmed by the major professor. The oral examination will be designed to test the student's ability to defend their work articulately with respect to research methodology, critical perspective, and applicability to related work in the area.

Students and their major professors will design their programs.

Master's projects may address topics in literature, literary theory, or rhetorical theory.

Please see the English graduate handbook for details and program requirements on earning the Master of Arts in English degree.

1. Students situate knowledge of diverse literature in English and the cultural, theoretical, and historical contexts in which these works are produced.
2. Students contribute to critical conversations about texts with original interpretations of those texts argued via a clear and feasible thesis statement.
3. Students exhibit effective deployment of research as evidence to support arguments and textual interpretations.
4. Students writing exhibits correct usage of grammar and of MLA format and citation conventions.
5. Students situate themselves within the profession of English studies by submitting a final project that is suitable to be submitted for publication.

English Minor

Code	Title	Hours
ENGL 215	Introduction to English Studies	3
Select two survey courses from the following:		6
ENGL 257	Survey of Western World Literature I or ENGL 258 Survey of Western World Literature II	
ENGL 267	Survey of British Literature I or ENGL 268 Survey of British Literature II	
ENGL 277	Survey of American Literature I or ENGL 278 Survey of American Literature II	
Select four Upper-Division English courses ¹		12
Total Hours		21

Courses to total 21 credits for this minor

1

Chosen from any course at the 300- or 400-level; at least two must be literature courses, and at least one must be at the 400-level.

Professional Writing Minor

Code	Title	Hours
ENGL 202	Technical Writing I	3
ENGL 440	Professional Writing Portfolio	3
Select two of the following courses: ¹		6-7
ENGL 207	Persuasive Writing	

ENGL 208	Personal & Exploratory Writing	
ENGL 290	Introduction to Creative Writing	
JAMM 121	Media Writing	
JAMM 275	Introduction to Film and TV Production	
Select three of the following courses: ²		9
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318/ JAMM 328	Science Writing	
ENGL 402	Internship in Tutoring Writing	
ENGL 419	Writing for the Web	
ENGL 498	Internship (Max 6 credits)	
JAMM 325	Publications Editing	
JAMM 350	Public Relations Writing and Production	
JAMM 425	Magazine Writing	
Total Hours		21-22

Courses to total 21 credits for this minor

1

ENGL 208 and ENGL 290 cannot both count towards fulfillment of the requirements in the Professional Writing Emphasis.

2

Only one JAMM course may be used towards this requirement.

Teaching English as a Second Language Minor

Code	Title	Hours
Select two of the following:		6
ENGL 241	Introduction to the Study of Language	
ENGL 408	Language Acquisition and Development	
ENGL 410	Studies in Linguistics	
ENGL 444	Sociolinguistics	
Select one of the following:		3
ANTH 261	Language and Culture	
COMM 335	Intercultural Communication	
ENGL 496	History of the English Language	
SOC 427	Racial and Ethnic Relations	
Select one of the following:		3
EDCI 302	Teaching Culturally Diverse Learners	
EDCI 437	Secondary Foreign Language Methods	
EDCI 448	Introduction to ENL	
Select 2 additional courses from any of the above lists		6
Total Hours		18

Courses to total 18 credits for this minor

Technical Writing Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (<https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/>)).

Code	Title	Hours
ENGL 202	Technical Writing I	3
Select three courses from the following:		9
ENGL 309	Rhetorical Style	
ENGL 313	Business Writing	
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
ENGL 320	Grant and Proposal Writing (Grant Writing)	
ENGL 417	Technical Writing III (Advanced Technical Writing)	
ENGL 418	Visual Perception, Culture, and Rhetoric (Visual Culture and Rhetoric)	
ENGL 419	Writing for the Web	
ENGL 440	Professional Writing Portfolio	
Total Hours		12

Courses to total 12 credits for this certificate

The student will be able to...

- develop a professional portfolio to use on the job market,
- enter and successfully communicate in professional environments,
- be strong rhetors who add to their existing skills and backgrounds to solve technical communication problems and produce visual and verbal communication,
- translate discipline-specific discourse to meet the needs of audiences with lower levels of technical expertise,
- articulate the affordances and constraints of technologies to stakeholders,
- communicate solutions to rhetorical problems in a variety of print and digital genres.

Department of History

History is the study of human experience in all its diverse aspects. To interpret the present, one must understand the past; there is no better predictor of the future than past behavior. History courses train students to think analytically, to conduct research, to evaluate source materials, and to interpret human behavior. Through writing and independent research, students hone their analytical and communication skills. They also acquire greater cultural and international awareness as they become more familiar with the socio-cultural settings that shapes human consciousness and action. History is by nature interdisciplinary and international in scope.

A degree in history offers excellent preparation for students to pursue careers in public history, museum curatorship, archive management, law, education, international relations, international business, management, library science, communications and media, and tourism and recreation as well as any career working with public documents and government records.

The department offers courses of study leading to the B.A. or B.S. degree. The undergraduate curriculum focuses on the United States

(colonial times to the present), Europe (Antiquity to the current EU), Latin America (modern), Asia (modern), Race, and Visual and Material Culture. History faculty members also offer coursework for students in Environmental Science, International Studies, Interdisciplinary Studies, and Latin American Studies as well as minors in Religious Studies, Women and Gender Studies, and American Indian Studies.

Graduate study is offered in the history of the United States, Europe (Antiquity to the current EU), Latin America, Visual and Material Culture, and Gender. The degree programs include Master of Arts and Doctor of Philosophy, for which dissertation topics are limited to the fields of the North American West, U.S. since 1877, Historical Archaeology, and Europe since 1750. Dissertations in historical archaeology are undertaken with the collaboration of anthropology faculty specializing in this field. In addition, we offer a Ph.D. in history with a focus in historical archaeology in coordination with the Department of Culture, Society and Justice (p. 311).

Students applying for admission to graduate study in history must be approved by the majority of the history faculty. Students seeking graduate degrees in history must present an undergraduate transcript with at least a 3.00 average in all history courses and a 2.80 overall average that shows at least 12 credits earned in a foreign language.

Majors

- History (B.A.) (p. 327)
- History (B.S.) (p. 328)

Minors

- History Minor (p. 330)

History Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of History. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree. Detailed information about requirements and procedures related to these programs is available in printed form from the head of the department.

- History (M.A.) (p. 329)
- History (Ph.D.) (p. 329)

History (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

Code	Title	Hours
HIST 290	The Historian's Craft	3
HIST 495	History Senior Seminar	3
Select 12 credits of 100- or 200-Level History courses		12
Select 21 credits of 300- or 400-level History courses		21
Select 20 credits from related fields		20
Total Hours		59

Courses to total 120 credits for this degree

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
Oral Communication Course		3
Mathematical Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Lower Division History Course		3
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
Lower Division History Course		3
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Hours		13
Fall Term 2		
HIST 290	The Historian's Craft	3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Scientific Ways of Knowing Course		4
Lower Division History Course		3
Hours		14
Spring Term 2		
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Lower Division History Course		3
Social and Behavioral Ways of Knowing Course		3
American Diversity Course		3
B.A. Course Requirement		3
Hours		16
Fall Term 3		
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Related Fields, Major Elective		3
Upper Division History Course		3
B.A. Course Requirement		3
International Course		3
Hours		16
Spring Term 3		
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Upper Division History Course		3
Upper Division History Course		3
Related Fields, Major Elective Course		3
Related Fields, Major Elective Course		3
Hours		16
Fall Term 4		
Upper Division History Course		3
Upper Division History Course		3
Related Fields, Major Elective Course		3
Related Fields, Major Elective Course		3
B.A. Course Requirement		3
Hours		15
Spring Term 4		
HIST 495	History Senior Seminar	3
Upper Division History Course		3
Upper Division History Course		3
Related Fields, Major Elective Course		3
Related Fields, Major Elective Course		3
Hours		15
Total Hours		120

1) Students should be able to explain the historical context that shapes human consciousness and action and identify those factors which shape continuity and change in diverse human communities.

2) Students should recognize the rich diversity of human artifacts, reflect upon how they illuminate the historical past, and use them to make meaning of the human experience.

3) Students should understand historical evidence and interpretation, assess their strengths and weaknesses, and situate both in broader scholarly debate.

4) Students can formulate historical questions and engage in independent research and inquiry.

5) Students demonstrate command of formal language and can exchange ideas in a cogent, coherent, and respectful manner.

6) Students can apply historical knowledge so they can reflect upon global human experience and complexity.

History (B.S.)

Note: Students expecting to study for an M.A. or Ph.D. degree in the humanities and social sciences should take the B.A. rather than the B.S. degree.

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.S. degree, and:

Code	Title	Hours
HIST 290	The Historian's Craft	3
HIST 495	History Senior Seminar	3
Select 12 credits of 100 - 200-Level History courses		12
Select 21 credits of 300 - 400-level History courses		21
Select 20 credits from related fields		20
Select any combination of the following:		12
Any foreign language ¹		
Courses selected from the University's general education "diversity" or "international" requirements in addition to the university-wide general ed requirements:		
Total Hours		71

Courses to total 120 credits for this degree

1

High-school foreign language may be substituted at the rate of 4 credits per year.

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
LWDV History, Major Elective Course		3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
LWDV History, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		1
Hours		13
Fall Term 2		
HIST 290	The Historian's Craft	3

Scientific Ways of Knowing Course	4	
Humanistic and Artistic Ways of Knowing Course	3	
LWDV History, Major Elective Course	3	
LWDV History, Major Elective Course	3	
Hours	16	
Spring Term 2		
UPDV History, Major Elective Course	3	
UPDV History, Major Elective Course	3	
Related Fields, Major Elective Course	3	
B.S. Course Requirement	3	
B.S. Course Requirement	3	
Hours	15	
Fall Term 3		
Foreign Lang or Amer Div/International, Major Elective Course	3	
International Course	3	
UPDV History, Major Elective Course	3	
Related Fields, Major Elective Course	3	
Related Fields, Major Elective Course	3	
Hours	15	
Spring Term 3		
Foreign Lang or Amer Div/International, Major Elective Course	3	
UPDV History, Major Elective Course	3	
UPDV History, Major Elective Course	3	
Related Fields, Major Elective Course	3	
American Diversity Course	3	
Hours	15	
Fall Term 4		
Foreign Lang or Amer Div/International, Major Elective Course	3	
UPDV History, Major Elective Course	3	
Related Fields, Major Elective Course	3	
Related Fields, Major Elective Course	3	
B.S. Course Requirement	3	
Hours	15	
Spring Term 4		
HIST 495	History Senior Seminar	3
Foreign Lang or Amer Div/International, Major Elective Course		3
UPDV History, Major Elective Course		3
Related Fields, Major Elective Course		3
B.S. Course Requirement		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students should be able to explain the historical context that shapes human consciousness and action and identify those factors which shape continuity and change in diverse human communities.
2. Students should recognize the rich diversity of human artifacts, reflect upon how they illuminate the historical past, and use them to make meaning of the human experience.
3. Students should understand historical evidence and interpretation, assess their strengths and weaknesses, and situate both in broader scholarly debate.

4. Students can formulate historical questions and engage in independent research and inquiry.
5. Students demonstrate command of formal language and can exchange ideas in a cogent, coherent, and respectful manner.
6. Students can apply historical knowledge so they can reflect upon global human experience and complexity.

History (M.A.)

Master of Arts. Major in History.

General M.A. requirements apply. This thesis and non-thesis degree is offered in all fields of history for which faculty is currently available. The work toward an M.A. degree stresses preparation for research as well as a balanced course program.

Please see the Department of History (<https://www.uidaho.edu/-/media/Uidaho-Responsive/Files/class/departments/history/Graduate-Forms/history-graduate-handbook.pdf?la=en&hash=E9D8119F06128B1D3A1B823126766D730DF44681>) graduate handbook (<https://www.uidaho.edu/-/media/Uidaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the Master of Arts in History degree.

1. Students will contextualize, evaluate, and interpret primary source materials within broad scholarly debate to create a meaningful contribution to historical scholarship.
2. Students will examine a broad variety of source materials as part of in-depth research to answer historical questions using rigorous critical analysis.
3. Students will formulate concrete historical questions, a reasonable plan of research, and carry it through successfully in a timely manner (ideally two years for full-time M.A. students) that culminates in a thesis with major argument based in primary evidence.
4. Students will communicate research findings and interpretation in formal academic manners, orally and in writing, culminating in a sustained argument presented in a thesis of appropriate length (approximately 100 pages).
5. Students will develop and refine organizational and writing skills to serve their research.

History (Ph.D.)

Doctor of Philosophy. Major in History.

The Ph.D. program is primarily oriented to research and writing to prepare the candidate for entry in a career in higher education. Among the requirements for the degree are the successful passage of comprehensive examinations, the demonstration of a reading knowledge of one foreign language, and the completion of a dissertation showing original research. Dissertation topics are limited to the field of Historical Archaeology and are undertaken with the collaboration of anthropology faculty specializing in this field.

Please see the Department of History (<https://www.uidaho.edu/-/media/Uidaho-Responsive/Files/class/departments/history/Graduate-Forms/history-graduate-handbook.pdf?>

la=en&hash=E9D8119F06128B1D3A1B823126766D730DF44681) graduate handbook (<https://www.uidaho.edu/-/media/Uldaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf>?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F) for details and program requirements on earning the PhD in History degree.

1. Students will contextualize, evaluate, and interpret primary source materials within broad scholarly debate to create a in depth contribution to historical and interdisciplinary scholarship.

History Minor

Code	Title	Hours
Select 9 credits of lower-division History courses ¹		9
Select 9 credits of upper-division History courses ²		9
Select one History elective		3
Total Hours		21

1

For demonstrable cause, department chair or minor advisor may allow substitution of courses numbered above 200-level.

2

At least 3 credits in U.S., Latin American, or African History and at least 3 credits in Ancient, European, or Asian History.

Courses to total 21 credits for this minor

Department of Politics and Philosophy

Bert Baumgaertner, Chair (322A Administration Building; phone: 208-885-5997)

Philosophy

Philosophy examines the grounds of knowledge, the nature of reality, and the nature of value, justice, and morality. It asks fundamental questions about how we reason and how we ought to reason. Its subject matter encompasses all other academic disciplines, indeed all areas of human experience, e.g., society, values, mind, language, art, and science.

The main value of philosophy lies in its contribution to a liberal education. As a central discipline of the humanities, philosophy encourages those who study it to gain insight into themselves and others, which proves helpful in setting high standards and working in productive collaboration with one's associates. In addition, philosophy is an excellent means of learning to reason and write clearly, which are skills useful in every conceivable human enterprise. Some philosophy majors pursue careers in academia; others, however, make rewarding careers for themselves in business, government, journalism, law, and human services.

Political Science

Political science is the study of politics and power from domestic, international, and comparative perspectives. It includes scholarship in administration, behavior, diplomacy, ideology, institutions, interest groups, law, policy, strategy, theory, and war. The undergraduate program in political science is designed to provide students with a comprehensive introduction to the discipline, viewed as a specific set of strategies for understanding political life. Though conceptual, historical, structural, institutional, and behavioral knowledge are delivered throughout the

curriculum, the emphasis of the program is on giving students the theoretical insights and methodological skills needed to ask and answer political questions. The emphasis is less on learning the facts of politics than on being able to recognize, evaluate, and use the intellectual tools of the discipline.

Students will leave the program with an understanding of the basic modes in inquiry in political science: normative, empirical, and comparative analysis. The core curriculum is designed to give students a broad theoretical framework in political science and an introduction to research methods. Upper division courses give students the opportunity to build specialized knowledge in political science through two of five concentration areas: American politics and political behavior, international relations and comparative politics, public administration and policy, public law, and political theory.

Political science provides a foundation for career development in law, politics, public service, non-profit and non-governmental organizations, business, academics, and other fields. Students in the program are also encouraged to take advantage of a variety of internship and service learning opportunities.

Majors

- Philosophy (B.A. or B.S.) (p. 331)
- Political Science (B.A.) (p. 333)
- Political Science (B.S.) (p. 334)

Minors

- Bioethics Minor (p. 330)
- Philosophy Minor (p. 332)
- Philosophy, Politics and Economics Minor (p. 333)
- Comparative/International Politics Minor (p. 331)
- Political Science Minor (p. 335)
- Religious Studies Minor - See the Religious Studies (p. 368) section for details on this minor.

Political Science Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Politics and Philosophy. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Political Science (M.A.) (p. 335)
- Public Administration (M.P.A.) (p. 336)
- Joint J.D./M.P.A. (p. 336)
- Political Science (Ph.D.) (p. 335)

Bioethics Minor

Code	Title	Hours
Basic Science Component		
Choose two courses from the following:		6-8
AVS 109	The Science of Animals that Serve Humanity	
AVS 110	Science of Animal Husbandry	
BIOL 114	Organisms and Environments	
BIOL 115	Cells and the Evolution of Life	
BIOL 227	Anatomy and Physiology I	

BIOL 310	Genetics
ENVS 101	Introduction to Environmental Science
FOR 235	Society and Natural Resources
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles
NRS 125	Introduction to Conservation and Natural Resources
NRS 235	Society and Natural Resources
PSYC 101	Introduction to Psychology
PSYC 218	Introduction to Research in the Behavioral Sciences

Basic Philosophy Component

PHIL 103	Introduction to Ethics	3
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Advanced Philosophy Component

PHIL 351	Philosophy of Science	3
or PHIL 417	Philosophy of Biology	

Choose one of the following: 3

PHIL 361	Professional Ethics
PHIL 450	Ethics in Science
PHIL 452	Environmental Philosophy

Advanced Science Component 3-4

Any 400-level AVS, BIOL, ENT, ENVS, FISH, FOR, H&S, NRS, PLSC, PSYC, REM, or WLF course(s) totaling 3 or more credits

OR

BOTH PHIL 351 and PHIL 417. This option enables philosophy majors to earn the Bioethics Minor without taking a 400-level science course (which would require prerequisites).

Total Hours 18-21

Courses to total 18-21 credits for this minor

Comparative/International Politics Minor

Code	Title	Hours
POLS 205	Introduction to Comparative Politics	3
POLS 237	Introduction to International Politics	3
Select 12 credits from the following Political Science courses:		12
POLS 381	European Politics	
POLS 410	Game Theory	
POLS 420	Introduction to Asian Politics	
POLS 423	Politics, Policy and Gender	
POLS 440	International Organizations and International Law	
POLS 449	World Politics and War	
POLS 480	Politics of Development	
POLS 487	Political Violence and Revolution	

Total Hours 18

Courses to total 18 credits for this minor

Philosophy (B.A. or B.S.)

Note: Students who intend to do graduate work are advised to take the Bachelor of Arts degree.

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for either the B.A. or B.S. (p. 310) degree, and:

Code	Title	Hours
PHIL 103	Introduction to Ethics	3
or PHIL 208	Business Ethics	
PHIL 201	Critical Thinking	3
or PHIL 202	Introduction to Symbolic Logic	
PHIL 240	Belief and Reality	3
PHIL 320	History of Ancient and Medieval Philosophy	3
PHIL 321	History of Modern Philosophy	3
PHIL 490	Senior Seminar	3
Select one course in Philosophy and Cultures:		3
PHIL 200	Philosophy of Alcohol	
PHIL 205	Topics in Social Philosophy	
PHIL 209	Mind and Madness	
PHIL 221	Philosophy in Film	
PHIL 307	Buddhism	
PHIL 408	Feminism and Philosophy	
Select 9 credits of Upper-Division Philosophy electives		9
Select 20 credits in related fields ¹		20
Total Hours		50

Courses to total 120 credits for this degree

1

Related Fields include Humanities, Social Sciences and Sciences. The electives in Philosophy and Related Fields are to be selected with the approval of the Chair of Philosophy.

Philosophy (B.A.)

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
Mathematical Ways of Knowing Course	3
Social and Behavioral Ways of Knowing Course	3
Elective Course	3
PHIL 103 OR PHIL 208	3
Hours 15	
Spring Term 1	Hours
PHIL 240 Belief and Reality	3
ENGL 102 Writing and Rhetoric II	3
Oral Communication Course	3
Scientific Ways of Knowing Course	4
PHIL 200 OR PHIL 205 OR PHIL 209 OR PHIL 221 OR PHIL 307	3
Hours 16	
Fall Term 2	Hours
PHIL 320 History of Ancient and Medieval Philosophy	3
Scientific Ways of Knowing Course	4
PHIL 201 OR PHIL 202	3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101	4
Hours 14	
Spring Term 2	Hours
PHIL 321 History of Modern Philosophy	3
International Course	3
Social and Behavioral Ways of Knowing Course	3
Elective Course	2
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102	4
Hours 15	

Fall Term 3	
UPDV Philosophy, Major Elective Course	3
Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
B.A. Course Requirement	3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4
Hours	16
Spring Term 3	
UPDV Philosophy, Major Elective Course	3
Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
Elective Course	2
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Hours	15
Fall Term 4	
UPDV Philosophy, Major Elective Course	3
American Diversity Course	3
Related Field, Major Elective Course	3
B.A. Course Requirement	3
Elective Course	3
Hours	15
Spring Term 4	
PHIL 490 Senior Seminar	3
Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
B.A. Course Requirement	3
Elective Course	2
Hours	14
Total Hours	120

Philosophy (B.S.)

Fall Term 1		Hours
ENGL 101 Writing and Rhetoric I	3	
Mathematical Ways of Knowing Course	3	
Social and Behavioral Ways of Knowing Course	3	
Humanistic and Artistic Ways of Knowing Course	3	
PHIL 103 OR PHIL 208	3	
Hours	15	
Spring Term 1		
PHIL 240 Belief and Reality	3	
ENGL 102 Writing and Rhetoric II	3	
Oral Communication Course	3	
Scientific Ways of Knowing Course	4	
PHIL 200 OR PHIL 205 OR PHIL 209 OR PHIL 221 OR PHIL 307	3	
Hours	16	
Fall Term 2		
PHIL 320 History of Ancient and Medieval Philosophy	3	
Scientific Ways of Knowing Course	4	
Elective Course	3	
Elective Course	1	
PHIL 201 OR PHIL 202	3	
Hours	14	
Spring Term 2		
PHIL 321 History of Modern Philosophy	3	
International Course	3	
Social and Behavioral Ways of Knowing Course	3	
Related Field, Major Elective Course	3	
Elective Course	3	
Hours	15	
Fall Term 3		
UPDV Philosophy, Major Elective Course	3	

Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
B.S. Course Requirement	3
Elective Course	3
Hours	15
Spring Term 3	
UPDV Philosophy, Major Elective Course	3
B.S. Course Requirement	3
Related Field, Major Elective Course	3
Elective Course	3
Elective Course	3
Hours	15
Fall Term 4	
UPDV Philosophy, Major Elective Course	3
American Diversity Course	3
Related Field, Major Elective Course	3
Elective Course	3
B.S. Course Requirement	3
Hours	15
Spring Term 4	
PHIL 490 Senior Seminar	3
Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
B.S. Course Requirement	3
Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students exhibit knowledge of diverse philosophical positions in metaphysics, epistemology, ethics, and social/political philosophy.
2. Students can distinguish between the normative and non-normative claims of a text and evaluate the arguments for these claims.
3. Students can write an analytic essay that exhibits both critical thinking and effective argumentation about philosophical topics.

Philosophy Minor

Code	Title	Hours
PHIL 320	History of Ancient and Medieval Philosophy	3
PHIL 321	History of Modern Philosophy	3
Select one of the following:		3
PHIL 103	Introduction to Ethics	
	or PHIL 208 Business Ethics	
PHIL 201	Critical Thinking	
PHIL 202	Introduction to Symbolic Logic	
PHIL 240	Belief and Reality	
Select three Upper-Division Philosophy courses		9
Total Hours		18

Courses to total 18 credits for this minor

Philosophy, Politics and Economics Minor

Code	Title	Hours
PHIL 103 or PHIL 208	Introduction to Ethics Business Ethics	3
POLS 101 or POLS 205 or POLS 237	American National Government Introduction to Comparative Politics Introduction to International Politics	3
PHIL/POLS 352	Philosophy, Politics, and Economics	3
Select one of the following:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Upper-division PHIL course		3
Upper-division POLS course		3
Upper division ECON course		3
Total Hours		22-24

Political Science (B.A.)

The B.A. degree emphasizes a traditional liberal arts education including a 16-credit foreign language requirement. Political Science majors must have a minimum of 36 credits in Political Science courses with at least 18 of those credits coming in upper-division courses. The course work also includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree (p. 310), and:

Code	Title	Hours
Political Science Core Requirements		
POLS 101	American National Government	3
POLS 235	Political Research Methods and Approaches	3
Select three introductory courses:		9
POLS 205	Introduction to Comparative Politics	
POLS 208	Introduction to Political Philosophy	
POLS 209	Introduction to American Politics and Policy	
POLS 237	Introduction to International Politics	
Senior Seminar		
POLS 490	Senior Experience (Requires Senior standing or 24 credit hours in political science.)	3
Additional Political Science Upper Division Requirements		
Select 18 credits from the following areas: ¹		18
<i>American Political Institutions & Behavior</i>		
POLS 331	American Political Parties and Elections	
POLS 332	American Congress	
POLS 333	American Political Culture	
POLS 437	American Presidency	
POLS 471	Federalism in Practice	
POLS 474	Public Opinion and Political Behavior	
<i>Public Administration and Public Policy</i>		
POLS 338	American Foreign Policy	
POLS 364	Politics of the Environment	
POLS 439	Public Policy	
POLS 451	Public Administration	

POLS 462	Natural Resource Policy	
<i>International and Comparative Politics</i>		
POLS 381	European Politics	
POLS 410	Game Theory	
POLS 420	Introduction to Asian Politics	
POLS 423	Politics, Policy and Gender	
POLS 440	International Organizations and International Law	
POLS 449	World Politics and War	
POLS 480	Politics of Development	
POLS 487	Political Violence and Revolution	
<i>Public Law</i>		
POLS 467	Constitutional Law	
POLS 468	Civil Liberties	
<i>Political Philosophy</i>		
PHIL 427	History of Political Philosophy II	
POLS 428	American Political Thought	
Upper-Division Related Fields		
Select 20 credits from related fields ²		20
Total Hours		56

Courses to total 120 credits for this degree

¹ Students may focus their interests in political science by choosing among courses in the following core areas. The allocation of those courses is subject to the approval of the faculty advisor. A maximum of 6 credits of political science internship and/or directed study courses may be counted toward meeting these political science credit requirements.

² Courses chosen depending on student interest in consultation with your advisor. Thesis and internship credits cannot be used to satisfy this requirement.

Fall Term 1		Hours
POLS 101	American National Government	3
ENGL 101	Writing and Rhetoric I	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
Scientific Ways of Knowing Course		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
POLS 205 OR POLS 208 OR POLS 209 OR POLS 237		3
POLS 205 OR POLS 208 OR POLS 209 OR POLS 237		3
Hours		15
Fall Term 2		Hours
POLS 235	Political Research Methods and Approaches	3
Scientific Ways of Knowing Course		4
POLS 205 OR POLS 208 OR POLS 209 OR POLS 237		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		14
Spring Term 2		Hours
Elective Course		1
Related Field, Major Elective Course		3
UPDV Political Science, Major Elective Course		3
UPDV Related Field, Major Elective Course		3

CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102	4
Hours	14
Fall Term 3	
Related Field, Major Elective Course	3
UPDV Political Science, Major Elective Course	3
UPDV Political Science, Major Elective Course	3
Elective Course	2
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4
Hours	15
Spring Term 3	
UPDV Political Science, Major Elective Course	3
Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
Social and Behavioral Ways of Knowing Course	3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Hours	16
Fall Term 4	
UPDV Political Science, Major Elective Course	3
Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
B.A. Course Requirement	3
B.A. Course Requirement	3
Hours	15
Spring Term 4	
POLS 490 Senior Experience	3
Related Field, Major Elective Course	3
Related Field, Major Elective Course	3
B.A. Course Requirement	3
Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students exhibit knowledge of diverse positions in comparative politics, political behavior, political philosophy, public policy, and international politics.
2. Students can critically assess texts and arguments about political topics.
3. Students can design and execute a research project using the appropriate method for investigating their thesis.

Political Science (B.S.)

The B.S. degree requires increased course work in behavioral research methods. Political Science majors must have a minimum of 39 credits in Political Science courses with at least 21 of those credits coming in upper-division courses. Coursework also includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.S. degree, and:

Code	Title	Hours
Political Science Core Requirements		
POLS 101	American National Government	3

POLS 235	Political Research Methods and Approaches	3
POLS 490	Senior Experience (Requires Senior standing or 24 credit hours in political science.)	3
Select three introductory courses:		9
POLS 205	Introduction to Comparative Politics	
POLS 208	Introduction to Political Philosophy	
POLS 209	Introduction to American Politics and Policy	
POLS 237	Introduction to International Politics	

Additional Political Science Upper Division Requirements

Select 18 credits from the following areas: ¹ 18

American Political Institutions and Behavior

POLS 331	American Political Parties and Elections
POLS 332	American Congress
POLS 333	American Political Culture
POLS 437	American Presidency
POLS 471	Federalism in Practice
POLS 474	Public Opinion and Political Behavior

Public Administration and Public Policy

POLS 338	American Foreign Policy
POLS 364	Politics of the Environment
POLS 439	Public Policy
POLS 451	Public Administration
POLS 462	Natural Resource Policy

International and Comparative Politics

POLS 381	European Politics
POLS 410	Game Theory
POLS 420	Introduction to Asian Politics
POLS 423	Politics, Policy and Gender
POLS 440	International Organizations and International Law
POLS 449	World Politics and War
POLS 480	Politics of Development
POLS 487	Political Violence and Revolution

Public Law

POLS 467	Constitutional Law
POLS 468	Civil Liberties

Political Philosophy

PHIL 427	History of Political Philosophy II
POLS 428	American Political Thought

Courses in upper-division related fields

Select 20 credits depending on student interest and in consultation with advisor ¹ 20

Additional research methods course

Select one additional research methods course in consultation with advisor ² 3

Total Hours 59

Courses to total 120 credits for this degree

¹ Thesis and internship credits cannot be used to satisfy this requirement.

² One additional research methods, math, or science course chosen in consultation with your advisor.

Fall Term 1		Hours
POLS 101	American National Government	3
ENGL 101	Writing and Rhetoric I	3
Oral Communication Course		3
Mathematical Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Scientific Ways of Knowing Course		4
Elective Course		2
POLS 205 OR POLS 208 OR POLS 209 OR POLS 237		3
POLS 205 OR POLS 208 OR POLS 209 OR POLS 237		3
Hours		15
Fall Term 2		Hours
POLS 235	Political Research Methods and Approaches	3
Scientific Ways of Knowing Course		4
UPDV Related Field, Major Elective Course		3
B.S. Course Requirement		3
POLS 205 OR POLS 208 OR POLS 209 OR POLS 237		3
Hours		16
Spring Term 2		Hours
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
UPDV Related Field, Major Elective Course		3
UPDV Political Science, Major Elective Course		3
Elective Course		3
Hours		15
Fall Term 3		Hours
UPDV Political Science, Major Elective Course		3
UPDV Political Science, Major Elective Course		3
UPDV Related Field, Major Elective Course		3
Research Methods, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 3		Hours
UPDV Political Science, Major Elective Course		3
UPDV Related Field, Major Elective Course		3
UPDV Related Field, Major Elective Course		3
B.S. Course Requirement		3
Elective Course		3
Hours		15
Fall Term 4		Hours
UPDV Political Science, Major Elective Course		3
UPDV Related Field, Major Elective Course		3
B.S. Course Requirement		3
Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		Hours
POLS 490	Senior Experience	3
UPDV Political Science, Major Elective Course		3
UPDV Related Field, Major Elective Course		3
B.S. Course Requirement		3
Elective Course		2
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of

your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students exhibit knowledge of diverse positions in comparative politics, political behavior, political philosophy, public policy, and international politics.
2. Students can critically assess texts and arguments about political topics.
3. Students can design and execute a research project using the appropriate method for investigating their thesis.

Political Science (M.A.) Master of Arts. Major in Political Science.

General College of Graduate Studies M.A. requirements for application must be followed. Applicants must also submit three letters of recommendation and a 300-500 word statement of purpose directly to the Department of Political Science.

Please see the Political Science graduate handbook for details and program requirements on earning the Master of Arts in Political Science degree.

Political Science (Ph.D.) Doctor of Philosophy. Major in Political Science.

General College of Graduate Studies requirements for application must be followed. Applicants to the Ph.D. program must also submit Graduate Record Examination scores, three letters of recommendation, and a 300-500 word statement of purpose directly to the Department of Political Science.

Please see the Political Science graduate handbook for details and program requirements on earning the PhD in Political Science degree.

1. Knowledge of basic concepts and theories of political science and its sub-fields.
2. Awareness of basic research findings and analytical methods.
3. Ability to apply theories to new situations and data, including those of everyday life.
4. Ability to distinguish normative from empirical arguments and to critically evaluate both.
5. Capacity to critically analyze empirical evidence.
6. Ability to communicate effectively in written and oral forms.
7. In-depth knowledge in at least two sub-fields of political science.

Political Science Minor

Code	Title	Hours
POLS 101	American National Government	3
Select 15 credits of any upper or lower division Political Science courses		15
Total Hours		18

Courses to total 18 credits for this minor

Public Administration (M.P.A.)

Master of Public Administration. Major in Public Administration.

The Department of Politics and Philosophy at the University of Idaho offers the Master of Public Administration (MPA) degree for students interested in careers in the governance and management of local governments and communities. Students can expect to leave the program with intellectual and analytical skills, and the practical experience needed to enhance their ability to serve local governments and communities. The program is public service oriented and is delivered in partnership with communities in Idaho and Washington.

Practitioner involvement in this program provides students with a more relevant and practical education than that found in more traditional programs. Academic faculty members work closely with local government professionals to deliver courses and professional development opportunities.

The program requires 36 hours of coursework, which includes an 18-hour core:

Code	Title	Hours
POLS 555	Public Administration Theory	3
POLS 557	Governmental Budgeting	3
POLS 565	Local Government Law	3
POLS 572	Local Government Politics and Administration	3
POLS 575	Public Personnel Administration	3
POLS 558	Research Methods for Local Government and Community Administration	3
Total Hours		18

Students develop their specific interests in local government by choosing 12 to 15 hours of elective courses in consultation with and approval of their advisor. These courses may be chosen in alignment with the bioregional planning and community design graduate program or other UI graduate programs. Students must also complete a final comprehensive examination.

Students with little or no public administration experience are required to complete a 3 to 6-hour internship to gain hands-on experience in the governance of local governments and communities. In-service students must complete 3 hours of POLS 559 (Field Based Research) in lieu of the internship.

The MPA program is available in both the traditional on-campus and online formats. Though no specific undergraduate preparation is required for the MPA, applicants must have a 3.0 undergraduate GPA and three letters of recommendation.

The MPA is also offered with the University of Idaho College of Law through a joint JD/MPA program. JD/MPA applicants must meet all the requirements for admission to the College of Law; applicants must apply to both the College of Law and the College of Graduate Studies for admission into the JD/MPA program.

Concurrent Degree in Law and Public Administration

The University of Idaho's joint JD/MPA degree program provides students with the opportunity to earn both degrees in three to four years. Students must apply separately to and be admitted by the College of Graduate Studies/Master of Public Administration Program, the College of Law, and the Concurrent JD/MPA Degree Program.

The Master of Public Administration is a professional degree for those who seek leadership positions in government and public service. It is ideal for law students who intend to practice for local governments as city attorneys, prosecutors, and public defenders, and who intend to assume leadership roles in local, state, and federal agencies and governments. Students in the MPA program learn the mechanics of government, but the program is fundamentally designed to prepare professionals who hope to run governments. The program is public service oriented, and is delivered in partnership with communities in Idaho and Washington.

The MPA is offered in both traditional and online formats. The MPA program requires 36 hours of coursework and is built around an 18-hour core curriculum (see above). The program also requires an internship (3 to 6 hours) and 12 to 15 hours of elective credits.

By double counting two courses (6 hours) in the program toward the JD, and after fulfilling the elective requirements for the MPA, students may complete the JD/MPA degrees with an additional 9 to 12 hours of coursework beyond the JD curriculum. Students must also complete a final MPA comprehensive examination.

The courses to be double-counted must be taken after matriculation into the JD program of study. Under law school accreditation standards, there are limits to the total number of distance education credits that can be counted toward the JD; any MPA classes taken by distance education that are credited toward completion of the JD will count against that limit (see ABA Standards and Rules of Procedure Standards 306(e) and 311(d)).

Students should be able to:

1. Lead and manage in public governance.
2. Participate in and contribute to the policy process.
3. Analyze, synthesize, think critically, solve problems, and make decisions.
4. Articulate and apply a public service perspective.
5. Communicate and work productively with a diverse and changing workforce and citizenry.

Department of Psychology and Communication

Ben Barton, Chair (211 Student Health Ctr. 83844-3043; phone 208-885-6324; www.uidaho.edu/class/psychcomm (<http://www.uidaho.edu/class/psychcomm/>))

Psychology is the scientific study of thinking, emotion, and behavior. It is a diverse field and can be applied to almost all aspects of everyday life: interpersonal relationships, school and lifelong learning, family, and the work environment. Psychology uses scientific research methods to develop and test theories and to explain or predict behavior. Undergraduate study in psychology provides a broad coverage of the field, whereas graduate study focuses more narrowly on a particular

discipline, preparing students for professional work as researchers and/or practitioners.

Communication is a social science discipline that considers how people verbally and nonverbally communicate at the individual, societal, and cultural levels. It can be seen as the discipline that links other disciplines: a discipline that is vital for people, organizations, and governments to thrive in today's complex world. Students with degrees in communication pursue careers as communication specialists in the fields of communication education, business, government and politics, high technology industries, health, and social and human services. Graduates may also pursue advanced degrees in communication and other fields.

The Department of Psychology and Communication offers a B.S. or B.A. in Psychology or Communication. The Psychology degree requires students to take a wide variety of courses in areas such as developmental processes, social psychology, learning and memory, personality, clinical psychology, biological processes, and sensation/perception. Depending on their interests, students also select from more specialized subjects such as human factors, industrial/organizational psychology, aging, and the psychology of emotion. The Communication degree requires students to take courses in a breadth of fields including speech, conflict management, interpersonal, organizational, and intercultural communication. Students choose additional coursework from the areas of persuasion, nonverbal, gender, and other relational communication.

Currently, graduate training in the department is available only in Psychology. The department offers an M.S. in Psychology with an emphasis in human factors psychology. The Master's Degree in Psychology prepares students for careers in government and industry, teaching at the junior college level, or for continued study at the doctoral level. The Ph.D. in Experimental Psychology prepares students for a research career that may involve applied research in industry or an academic position. An applicant to the graduate program must possess an undergraduate degree in psychology or a related field, such as engineering, computer science, or business. In addition, applicants should have completed a course in introductory statistics, a course in experimental psychology or research methods, and a course in computer programming. Additional coursework in cognitive psychology and sensation/perception is recommended. All applicants will be considered even if recommended coursework has not been taken.

Majors

- Communication (B.A. or B.S.) (p. 337)
- Psychology (B.A. or B.S.) (p. 339)

Minors

- Addictions Minor (p. 337)
- Communication Minor (p. 339)
- Psychology Minor (p. 341)

Psychology and Communication Studies Graduate Program

- Psychology (M.S.) (p. 341)
- Experimental Psychology (Ph.D.) (p. 339)

Addictions Minor

A grade of 'C' or above is required for each class.

Code	Title	Hours
PSYC 470	Introduction to Chemical Addictions	3
PSYC 472	Introduction to the Pharmacology of Psychoactive Drugs	3
PSYC 473	Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB	3
PSYC 474	Record Keeping and Case Management in Chemical Addictions Counseling	3
PSYC 475	Professional Ethics in Addictions Counseling	3
PSYC 476	Relapse Prevention in Chemical Addictions Counseling	3
PSYC 478	Individual and Group Therapy Techniques in Chemical Addictions Counseling	3
PSYC 482	Client Screening, Assessment, and Placement	3
Total Hours		24

Courses to total 24 credits for this minor

Communication (B.A. or B.S.)

A minimum GPA of 2.50 is required to graduate with a degree in Communication.

Required coursework includes the university requirements (see regulation J-3 (p.)), the general requirements for either the B.A. or B.S. degree, and:

Code	Title	Hours
COMM 111	Introduction to Communication	3
COMM 233	Interpersonal Communication	3
COMM 335	Intercultural Communication	3
COMM 355	Organizational Communication	3
COMM 359	Communication Research Methods	3
COMM 410	Conflict Management	3
COMM 453	Communication Theory	3
Select one of the following:		2-3
COMM 101	Fundamentals of Oral Communication	
COMM 150	Online Oral Communication	
Select one of the following:		3
PSYC 215	Quantitative Methods in Psychology	
STAT 251	Statistical Methods	
At least 18 upper-division credits		18
Up to 6 of these credits may be earned by taking:		
ENGL 313	Business Writing	
ENGL 317	Technical Writing II	
ORGS 415	Planning Professional Conferences and Events	
ORGS 441	Human Relations in the Workplace	
PSYC 310	Psychology of Personality	
PSYC 320	Introduction to Social Psychology	
PSYC 416	Industrial/Organizational Psychology	
Only 3 of these credits may come from:		
COMM 400	Seminar	

COMM 403	Workshop
COMM 494	Research Experience
COMM 497	Practicum in Instruction
COMM 498	Internship
COMM 499	Directed Study

At least 21 upper-division credits of the course requirements applied to the Communication major must be earned at the University of Idaho.

Total Hours **44-45**

Courses to total 120 credits for this degree

Communication (B.A.)

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
Social and Behavioral Ways of Knowing Course	3
Mathematical Ways of Knowing Course	3
COMM 101 OR COMM 150	3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101	4
Hours	16
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102	4
PSYC 215 OR STAT 251	3
Hours	16
Fall Term 2	
COMM 111 Introduction to Communication	3
B.A. Course Requirement	3
Scientific Ways of Knowing Course	4
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4
Hours	14
Spring Term 2	
COMM 233 Interpersonal Communication	3
COMM 355 Organizational Communication	3
Humanistic and Artistic Ways of Knowing Course	3
B.A. Course Requirement	3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Hours	16
Fall Term 3	
COMM 335 Intercultural Communication	3
COMM 359 Communication Research Methods	3
American Diversity Course	3
Elective Course	3
Elective Course	3
Hours	15
Spring Term 3	
B.A. Course Requirement	3
Scientific Ways of Knowing Course	4
UPDV Communication, Major Elective Course	3
UPDV Communication, Major Elective Course	3
Hours	13
Fall Term 4	
COMM 453 Communication Theory	3
UPDV Communication, Major Elective Course	3
UPDV Communication, Major Elective Course	3
Elective Course	3
Elective Course	3
Hours	15

Spring Term 4	Hours
COMM 410 Conflict Management	3
UPDV Communication, Major Elective Course	3
UPDV Communication, Major Elective Course	3
Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

Communication (B.S.)

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
Social and Behavioral Ways of Knowing Course	3
Mathematical Ways of Knowing Course	3
Scientific Ways of Knowing Course	4
COMM 101 OR COMM 150	3
Hours	16
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
B.S. Course Requirement	3
Elective Course	3
PSYC 215 OR STAT 251	3
Hours	15
Fall Term 2	
COMM 111 Introduction to Communication	3
Social and Behavioral Ways of Knowing Course	3
Scientific Ways of Knowing Course	4
B.S. Course Requirement	3
Elective Course	3
Hours	16
Spring Term 2	
COMM 233 Interpersonal Communication	3
COMM 355 Organizational Communication	3
Humanistic and Artistic Ways of Knowing Course	3
B.S. Course Requirement	3
B.S. Course Requirement	3
Hours	15
Fall Term 3	
COMM 335 Intercultural Communication	3
COMM 359 Communication Research Methods	3
American Diversity Course	3
Elective Course	3
Elective Course	3
Hours	15
Spring Term 3	
UPDV Communication, Major Elective Course	3
UPDV Communication, Major Elective Course	3
Elective Course	3
Elective Course	3
Elective Course	1
Hours	13
Fall Term 4	
COMM 453 Communication Theory	3
UPDV Communication, Major Elective Course	3
Elective Course	3
UPDV Communication, Major Elective Course	3
Elective Course	3
Hours	15
Spring Term 4	
COMM 410 Conflict Management	3

UPDV Communication, Major Elective Course	3
Elective Course	3
UPDV Communication, Major Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will understand Communication theories, perspectives, principles, and concepts.
2. Students will be able to engage in Communication Inquiry.
3. Students will be able to create messages appropriate to audience, purpose, and context.
4. Students will articulate characteristics of mediated and non-mediated messages.
5. Students will demonstrate the ability to ethically accomplish communicative goals.
6. Students will demonstrate an understanding of diverse perspectives in the ways they influence communication.

Communication Minor

Code	Title	Hours
COMM 111	Introduction to Communication	3
COMM 233	Interpersonal Communication	3
COMM 335	Intercultural Communication	3
COMM 355	Organizational Communication	3
COMM 410	Conflict Management	3
Select at least one course from the following:		3
COMM 240	Small Group Communication	
COMM 340	Family Communication	
COMM 347	Persuasion	
COMM 404	Special Topics	
COMM 431	Applied Business and Professional Communication	
COMM 432	Gender and Communication	
COMM 456	Nonprofit Fundraising	
COMM 492	Dark Side of Communication	
Total Hours		18

Courses to total 18 credits for this minor

Experimental Psychology (Ph.D.)

Doctor of Philosophy. Major in Experimental Psychology.

General Ph.D. requirements apply.

Code	Title	Hours
Required Courses		
PSYC 444	Sensation and Perception	3
PSYC 446	Engineering Psychology	3

PSYC 504	Special Topics	1
PSYC 509	Human Factors in Engineering Design	3
PSYC 512	Research Methods	3
PSYC 513	Advanced Research Methods	3
PSYC 525	Cognitive Psychology	3
PSYC 526	Cognitive Neuroscience	3
PSYC 552	Ergonomics and Biomechanics	3
PSYC 561	Human-Computer Interaction	3
PSYC 562	Advanced Human Factors	3
PSYC 599	Non-thesis Master's Research	1
PSYC 600	Doctoral Research and Dissertation	1
ORGS 450	Organizational Systems and Projects	3
STAT 431	Statistical Analysis	3
Select 3-4 credits in electives:		3-4
Total Hours		42-43

Courses to total 78 credits for this degree

1. Students should have a firm grounding in the foundational fields of human factors (e.g., cognition, sensation/perception, ergonomics/biomechanics, human factors engineering).
2. Students should develop a mastery of the fundamental skills of research design and statistical analysis.
3. Students should be able to apply theory/research to solve workplace problems and develop innovative workplace solutions.
4. Students should be able to conduct independent research that advances our knowledge of human factors.
5. Students should be able to educate and inform others about scientific findings in psychology.

Psychology (B.A. or B.S.)

PSYC 101 and PSYC 218 must be completed with a grade of 'C' or better and a minimum cumulative 2.50 GPA must be attained for students seeking upper-division standing in the department. To graduate with a degree in psychology, a 2.50 GPA must be attained.

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general requirements for either the B.A. or B.S. degree, and:

Code	Title	Hours
PSYC 101	Introduction to Psychology	3
PSYC 201	Survey of Contemporary Psychology	1
PSYC 215	Quantitative Methods in Psychology	3
or STAT 251	Statistical Methods	
PSYC 218	Introduction to Research in the Behavioral Sciences	4

A grade of 'C' or above in at least three courses from each of the following groups: 18

Personal/Social Bases of Behavior:		
PSYC 305	Developmental Psychology	
PSYC 310	Psychology of Personality	
PSYC 311	Abnormal Psychology	
PSYC 320	Introduction to Social Psychology	
PSYC 430	Tests and Measurements	
Biological/Experimental Bases of Behavior:		

PSYC 325	Cognitive Psychology	
PSYC 372	Physiological Psychology	
PSYC 390	Psychology of Learning	
PSYC 425	Psychology of Action	
PSYC 444	Sensation and Perception	
PSYC 456	Psychology of Emotion	
Select at Least 12 Additional Upper-Division Psychology Credits		12
Up to 6 of these credits may be earned by taking:		
COMM 347	Persuasion	
COMM 355	Organizational Communication	
COMM 410	Conflict Management	
COMM 432	Gender and Communication	
Only 3 of these credits may come from:		
PSYC 400	Seminar	
PSYC 494	Psychology Research Training	
PSYC 497	Practicum in Instruction	
PSYC 498	Internship	
PSYC 499	Directed Study	
Total Hours		41

Courses to total 120 credits for this degree**Psychology (B.A.)**

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
PSYC 101	Introduction to Psychology	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR SPAN 101		4
Hours		16
Spring Term 1	Hours	
ENGL 102	Writing and Rhetoric II	3
PSYC 201	Survey of Contemporary Psychology	1
Scientific Ways of Knowing Course		4
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR SPAN 102		4
PSYC 215 OR STAT 251		3
Hours		15
Fall Term 2	Hours	
PSYC 218	Introduction to Research in the Behavioral Sciences	4
Humanistic and Artistic Ways of Knowing Course		3
PSYC 305 OR PSYC 310 OR PSYC 311 OR PSYC 320 OR PSYC 430		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		14
Spring Term 2	Hours	
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
PSYC 305 OR PSYC 310 OR PSYC 311 OR PSYC 320 OR PSYC 430		3
PSYC 325 OR PSYC 372 OR PSYC 390 OR PSYC 425 OR PSYC 444 OR PSYC 456		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Hours		16
Fall Term 3	Hours	
UPDV Psychology, Major Elective Course		3
UPDV Psychology, Major Elective Course		3
American Diversity Course		3
Elective Course		2
PSYC 325 OR PSYC 372 OR PSYC 390 OR PSYC 425 OR PSYC 444 OR PSYC 456		3
Hours		14

Spring Term 3	Hours	
UPDV Psychology, Major Elective Course	3	
B.A. Course Requirement	3	
International Course	3	
Scientific Ways of Knowing Course	4	
PSYC 305 OR PSYC 310 OR PSYC 311 OR PSYC 320 OR PSYC 430	3	
Hours	16	
Fall Term 4	Hours	
PSYC 415	History and Systems of Psychology	3
B.A. Course Requirement		3
Elective Course		3
Elective Course		3
PSYC 325 OR PSYC 372 OR PSYC 390 OR PSYC 425 OR PSYC 444 OR PSYC 456		3
Hours		15
Spring Term 4	Hours	
UPDV Psychology, Major Elective Course	3	
B.A. Course Requirement	3	
Elective Course	3	
Elective Course	3	
Elective Course	2	
Hours		14
Total Hours		120

Psychology (B.S.)

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
PSYC 101	Introduction to Psychology	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
Elective Course		2
Hours		14
Spring Term 1	Hours	
ENGL 102	Writing and Rhetoric II	3
PSYC 201	Survey of Contemporary Psychology	1
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
PSYC 215 OR STAT 251		3
Hours		14
Fall Term 2	Hours	
PSYC 218	Introduction to Research in the Behavioral Sciences	4
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
PSYC 305 OR PSYC 310 OR PSYC 311 OR PSYC 320 OR PSYC 430		3
Hours		16
Spring Term 2	Hours	
B.S. Course Requirement		3
Elective Course		3
Elective Course		3
PSYC 305 OR PSYC 310 OR PSYC 311 OR PSYC 320 OR PSYC 430		3
PSYC 325 OR PSYC 372 OR PSYC 390 OR PSYC 425 OR PSYC 444 OR PSYC 456		3
Hours		15
Fall Term 3	Hours	
UPDV Psychology, Major Elective Course		3
B.S. Course Requirement		3
American Diversity Course		3
UPDV Psychology, Major Elective Course		3
PSYC 325 OR PSYC 372 OR PSYC 390 OR PSYC 425 OR PSYC 444 OR PSYC 456		3
Hours		15
Spring Term 3	Hours	
International Course		3

UPDV Psychology, Major Elective Course	3
Elective Course	3
Scientific Ways of Knowing Course	4
PSYC 305 OR PSYC 310 OR PSYC 311 OR PSYC 320 OR PSYC 430	3
Hours	16
Fall Term 4	
PSYC 415 History and Systems of Psychology	3
B.S. Course Requirement	3
Elective Course	3
Elective Course	3
PSYC 325 OR PSYC 372 OR PSYC 390 OR PSYC 425 OR PSYC 444 OR PSYC 456	3
Hours	15
Spring Term 4	
UPDV Psychology, Major Elective Course	3
B.S. Course Requirement	3
Elective Course	3
Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. The student will demonstrate knowledge of biological and cognitive bases of behavior.
2. The student will demonstrate knowledge of developmental, personal, and social bases of behavior.
3. The student will ethically apply psychological theory and research to real-world contexts.
4. The student will recognize importance of respect for members of diverse groups with sensitivity to issues of power, privilege, and discrimination.
5. The student will critically evaluate information by applying psychological research and statistical principles.

Psychology (M.S.) Master of Science. Major in Psychology.

In addition to the admission requirements of the Graduate College, the department requires Graduate Record Examination scores, letters of recommendation, and a brief essay regarding plans for graduate study and professional career. The undergraduate degree need not be in psychology, although at least a minor in psychology is desirable. In the event the student has a minimal background in psychology, this deficiency may be remedied by enrolling in certain undergraduate courses that would not necessarily be included in the graduate study plan.

The study program for each student is prepared with their future plans as a point of departure. Some students seek the master's degree as a terminal degree and assume positions in community mental health organizations, school systems, or industry, while others continue in doctoral studies.

There are many research opportunities in the department. Students are encouraged to begin research early in their graduate study under the direction of a major professor of mutual choice.

Students admitted to this program must fulfill the requirements of the College of Graduate Studies and of the Department of Psychology and Communication Studies. See the College of Graduate Studies (p. 292) section for the general requirements applicable to all M.S. degrees.

Please see the Department of Psychology graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/class/departments/psych-comm/graduate/graduate-student-handbook.pdf?la=en&hash=2B79E3825EF636F8C1348D1B157762DD848B00DE>) for details and program requirements on earning the Master of Science in Psychology degree.

1. Students should develop a mastery of the fundamental skills of research design and statistical analysis.
2. Students should be able to move, intellectually and ethically, between theory/research and application of their sub-fields to organizations/business, technology, group relations, decision-making, human performance and safety, and more.
3. Students should be able to diagnose workplace problems and develop innovative workplace solutions.

Psychology Minor

Note: All courses required for the psychology minor must be completed with a grade of 'C' or better.

Code	Title	Hours
PSYC 101	Introduction to Psychology	3
Select at least one of the following:		3-4
ORGS 444	Methods and Analysis in Organizational Science	
PEP 455	Design & Analysis of Research in Movement Sciences	
PSYC 218	Introduction to Research in the Behavioral Sciences	
SOC 309	Social Science Research Methods	
SOC/ANTH 417	Social Data Analysis	
Select at least two courses from each of the following groups:		12
Personal/Social Bases of Behavior:		
PSYC 305	Developmental Psychology	
PSYC 310	Psychology of Personality	
PSYC 311	Abnormal Psychology	
PSYC 320	Introduction to Social Psychology	
PSYC 430	Tests and Measurements	
Biological/Experimental Bases of Behavior:		
PSYC 325	Cognitive Psychology	
PSYC 372	Physiological Psychology	
PSYC 390	Psychology of Learning	
PSYC 425	Psychology of Action	
PSYC 444	Sensation and Perception	
PSYC 456	Psychology of Emotion	
Select at least one additional upper-division Psychology course: ¹		3
Total Hours		21-22

Courses to total 21 credits for this minor

1

Not including PSYC 400, PSYC 403, PSYC 497, or PSYC 499.

Department of Theatre Arts

Robert Caisley, Department Chair (Corner of 6th and Rayburn Shoup Hall - 2nd Floor. 208-885-6465. theatre@uidaho.edu, <http://www.uidaho.edu/class/theatre/>)

Theatre is a liberal art as well as a fine art. The programs offered by the Department of Theatre Arts are designed to encourage the development of the whole person, which is a hallmark of a liberal arts education.

We offer a supportive environment where individuals may achieve their full potential as independent creative artists and compassionate people. Our programs promote knowledge, critical thinking, and creative problem solving. As students explore diverse theatre traditions, they gain a deeper understanding of themselves and their role in society. As they participate in the creative process of theatre production, they develop the teamwork and communication skills they will need as effective and successful members of society.

Career prospects for theatre students are vast and varied. Theatre Arts degree graduates find employment in professional theatre, film, television, virtual technology, education, arts management, art therapy, marketing, and other fields. The department's program of study also offers a solid foundation for competitive placement in distinguished graduate programs.

The B.A. and B.S. degrees are available for students interested in the study of theatre within a liberal arts background or as part of a teacher education program. The B.F.A. is a rigorous, competitive program of study for students interested in pursuing careers in professional theatre. An audition or portfolio review and faculty approval are required for acceptance into the B.F.A. program. The progress of B.F.A. candidates is monitored closely each semester, utilizing performance juries and portfolio reviews. A core of theatre work is required of all theatre majors. Specialization is available in performance or design at the undergraduate level, and students enjoy flexibility in shaping their studies according to particular goals or interests. Minors are available in theatre for those students wishing to expand the focus of their degree program.

All Theatre Arts students are expected to maintain a cumulative GPA of 3.0 or above to participate in productions as actors, stage managers, designers, or assistants.

Students must also earn a C or above in all theatre classes to participate in productions the following semester.

Productions help students foster a close working relationship with faculty and enable the kind of growth that comes through working with professional artists. Class projects and studio work are fully integrated with the department's season to create a balance between theory and skill development.

M.F.A. in Theatre

The department also offers Idaho's only Master of Fine Arts degree in theatre. The program is a rigorous 60-72 credit hour degree designed for students wishing to prepare for a career in the professional theatre. The M.F.A. is also the terminal degree expected for individuals teaching at the university or college level. Graduate students

may select an area of emphasis in acting, directing, design, and/or technology, dramatic writing, or theatre pedagogy. Numerous opportunities exist to design, perform, and direct productions, which are considered an integral part of graduate training. Student progress is monitored by portfolio review or performance jury each semester. Exit procedures for the program include a creative project and comprehensive exam.

Admission requires a minimum of 3.0 GPA, a statement of goals or intent, three letters of recommendation, and a portfolio of design work or a 4-6 minute audition tape. A limited number of graduate assistantships are available for qualified candidates.

M.F.A. in Theatre: Distance-Delivery Format

The department also offers the curriculum for our M.F.A. program via our unique distance-delivered format. This format is designed for place-bound graduate students who are working professionals and unable to relocate to continue their graduate study toward their terminal degree. We offer the distance-ed option in the following areas of emphasis: design, technology and management (DTM), directing, dramatic writing, and theatre pedagogy.

Theatre Facilities

The department has two theatre venues as well as a performance studio that is used for productions, rehearsals, and classrooms. The elegant 417-seat Hartung Theatre features a semi-thrust proscenium stage, new digital lighting, and fully-equipped shops for scenery and costume construction. The Forge Theatre is an intimate 100-seat performance studio, equipped for flexible staging, including theatre-in-the-round. The 50-seat Pocket Playhouse is used for both productions and as a class laboratory.

For more information on the department, its programs of study and theatre productions, visit our web site at www.uitheatre.com (<http://www.uitheatre.com/>), or call 208-885-6465.

Majors

- Theatre Arts (B.A. or B.S.) (p. 342)
- Theatre Arts (B.F.A.) (p. 344)

Minors

- Theatre Design and Technology Minor (p. 346)
- Theatre Performance Minor (p. 346)

Theatre Arts Graduate Program

- Theatre Arts (M.F.A.) (p. 345)

Theatre Arts (B.A. or B.S.)

To be eligible for graduation, Theatre Arts students taking B.A./B.S. options in Theatre must achieve a minimum grade of 'C' in all THE courses required by their major. To participate in departmental productions, a student must maintain a minimum 3.0 GPA overall.

Required course work for students pursuing the B.A. in Theatre Arts includes:

1. The university requirements (see regulation J-3 (p.)), and
2. The general CLASS core requirements, and
3. The Theatre Arts core courses listed below.

Required course work for students pursuing the B.S. in Theatre Arts includes:

1. The university requirements (see regulation J-3 (p.)), and
2. The general CLASS core, an established minor, or courses in a related field approved by the Theatre Arts Department (20 credits), and the Theatre Arts core courses listed below.

Code	Title	Hours
THE 101	Introduction to the Theatre	3
THE 102	Introduction to Design	3
THE 103	Theatre Technology	3
THE 104	Costume Technology	3
THE 105	Basics of Performance I	3
THE 106	Basics of Performance II	3
THE 371	Play Analysis	3
THE 390	Theatre Practice II (At least 1 credit in 4 different semesters)	4
THE 452	Theatre Historiography	3
THE 453	Topics in World Theatre History	3
THE 483	Senior Capstone Project	1
Select two of the following courses:		6
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
THE 320	Theatre Management	
Total Hours		38

Courses to total 120 credits for this degree

Theatre Arts (B.A.)

Term	Course	Hours	
Fall Term 1	ENGL 101	Writing and Rhetoric I	3
	THE 101	Introduction to the Theatre	3
	THE 105	Basics of Performance I	3
	THE 103	Theatre Technology	3
	Mathematical Ways of Knowing Course		3
Hours		15	
Spring Term 1	THE 104	Costume Technology	3
	THE 106	Basics of Performance II	3
	THE 102	Introduction to Design	3
	ENGL 102	Writing and Rhetoric II	3
	Scientific Ways of Knowing Course		4
Hours		16	
Fall Term 2	Oral Communication Course		3
	Social and Behavioral Ways of Knowing Course		3
	Humanistic and Artistic Ways of Knowing Course		3
	American Diversity Course		3
	Related Field/Minor, Major Elective Course		3
Hours		15	
Spring Term 2	THE 371	Play Analysis	3
	Scientific Ways of Knowing Course		4

Social and Behavioral Ways of Knowing Course		3
Related Field/Minor, Major Elective Course		3
THE 201 OR THE 202 OR THE 205 OR THE 320		3
Hours		16
Fall Term 3		
THE 452	Theatre Historiography	3
THE 390	Theatre Practice II	1
B.A. Course Requirement		3
THE 201 OR THE 202 OR THE 205 OR THE 320		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		14
Spring Term 3		
THE 390	Theatre Practice II	1
International Course		3
B.A. Course Requirement		3
Related Field/Minor, Major Elective Course		3
1 credit Elective Course		1
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		15
Fall Term 4		
THE 390	Theatre Practice II	1
Related Field/Minor, Major Elective Course		3
Related Field/Minor, Major Elective Course		3
B.A. Course Requirement		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		14
Spring Term 4		
THE 390	Theatre Practice II	1
THE 483	Senior Capstone Project	1
THE 453	Topics in World Theatre History	3
Related Field/Minor, Major Elective Course		3
Related Field/Minor, Major Elective Course		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Hours		15
Total Hours		120

Theatre Arts (B.S.)

Term	Course	Hours	
Fall Term 1	ENGL 101	Writing and Rhetoric I	3
	THE 101	Introduction to the Theatre	3
	THE 105	Basics of Performance I	3
	THE 103	Theatre Technology	3
	Mathematical Ways of Knowing Course		3
Hours		15	
Spring Term 1	THE 104	Costume Technology	3
	THE 106	Basics of Performance II	3
	ENGL 102	Writing and Rhetoric II	3
	Scientific Ways of Knowing Course		4
	Oral Communication Course		3
Hours		16	
Fall Term 2	THE 102	Introduction to Design	3
	Social and Behavioral Ways of Knowing Course		3
	Humanistic and Artistic Ways of Knowing Course		3
	American Diversity Course		3
	Related Field/Minor, Major Elective Course		3
Hours		15	
Spring Term 2	THE 371	Play Analysis	3
	Scientific Ways of Knowing Course		4

Social and Behavioral Ways of Knowing Course	3
Related Field/Minor, Major Elective Course	3
THE 201 OR THE 202 OR THE 205 OR THE 320	3
Hours	16
Fall Term 3	
THE 452 Theatre Historiography	3
THE 390 Theatre Practice II	1
B.S. Course Requirement	3
Elective Course	3
Elective Course	1
THE 201 OR THE 202 OR THE 205 OR THE 320	3
Hours	14
Spring Term 3	
THE 390 Theatre Practice II	1
THE 453 Topics in World Theatre History	3
B.S. Course Requirement	3
Related Field/Minor, Major Elective Course	3
International Course	3
Elective Course	2
Hours	15
Fall Term 4	
THE 390 Theatre Practice II	1
B.S. Course Requirement	3
Related Field/Minor, Major Elective Course	3
Related Field/Minor, Major Elective Course	3
Elective Course	3
Elective Course	2
Hours	15
Spring Term 4	
THE 390 Theatre Practice II	1
THE 483 Senior Capstone Project	1
B.S. Course Requirement	3
Related Field/Minor, Major Elective Course	3
Related Field/Minor, Major Elective Course	3
Elective Course	3
Hours	14
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will demonstrate a knowledgeable awareness of the interconnectedness of theatre history, dramatic theory, and production practices. They will distinguish and apply terminologies, processes, and traditions specific to Theatre Arts.
2. Students will articulate insights about Theatre Arts and specific theatre events.
3. Students will demonstrate self-reflection; they will clearly articulate the role of theatre in their lives.
4. Students will articulate a personal philosophy about theatre practice, its cultural impact on society, and their responsibility as an artist.

Theatre Arts (B.F.A.)

The Bachelor of Fine Arts is a rigorous training program for students wishing to pursue a career in the professional theatre. The program

offers two areas of emphasis: Performance (acting) and DTM (design, theatre technology, and management). Individual courses are selected in consultation with an advisor, so the degree is tailored as closely as possible to a student's specific needs and interests. Students are encouraged to seek out internships with professional theatre companies as part of their program of study.

Admittance to the B.F.A. program in Theatre requires an audition or portfolio review and faculty approval. Student progress is closely monitored through performance juries and portfolio reviews each semester.

To be eligible for admittance, continued candidacy, and graduation, the B.F.A. candidate must achieve a minimum grade of 'C' in each THE course required for the major. To participate in departmental productions, a student pursuing the B.F.A. must maintain a minimum 3.00 GPA overall.

Required course work includes:

1. The university requirements (see regulation J-3 (p.)),
2. The Theatre Arts core courses listed below, and
3. A 30-credit area in either DTM or Performance of departmental-approved coursework.

Theatre Arts Core

Code	Title	Hours
THE 101	Introduction to the Theatre	3
THE 102	Introduction to Design	3
THE 103	Theatre Technology	3
THE 104	Costume Technology	3
THE 105	Basics of Performance I	3
THE 106	Basics of Performance II	3
THE 371	Play Analysis	3
THE 390	Theatre Practice II (Four Credits Required)	4
THE 452	Theatre Historiography	3
THE 453	Topics in World Theatre History	3
THE 483	Senior Capstone Project	1
Select two of the following courses:		6
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
THE 320	Theatre Management	
Total Hours		38

Courses to total 120 credits for this degree

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
THE 101	Introduction to the Theatre	3
THE 105	Basics of Performance I	3
THE 103	Theatre Technology	3
Mathematical Ways of Knowing Course		3
Hours		15
Spring Term 1		
THE 104	Costume Technology	3
THE 106	Basics of Performance II	3
THE 102	Introduction to Design	3
ENGL 102	Writing and Rhetoric II	3
Oral Communication Course		3
Hours		15

Fall Term 2		
Social and Behavioral Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Scientific Ways of Knowing Course		4
Hours		13
Spring Term 2		
THE 371	Play Analysis	3
Scientific Ways of Knowing Course		4
Social and Behavioral Ways of Knowing Course		3
Elective Course		2
THE 201 OR THE 202 OR THE 205 OR THE 320		3
Hours		15
Fall Term 3		
THE 452	Theatre Historiography	3
THE 390	Theatre Practice II	1
DTM or Performance, Major Elective Course		3
American Diversity Course		3
DTM or Performance, Major Elective Course		3
THE 201 OR THE 202 OR THE 205 OR THE 320		3
Hours		16
Spring Term 3		
THE 390	Theatre Practice II	1
THE 453	Topics in World Theatre History	3
International Course		3
DTM or Performance, Major Elective Course		3
Elective Course		3
DTM or Performance, Major Elective Course		3
Hours		16
Fall Term 4		
THE 390	Theatre Practice II	1
Elective Course		3
DTM or Performance, Major Elective Course		3
Elective Course		3
DTM or Performance, Major Elective Course		3
DTM or Performance, Major Elective Course		3
Hours		16
Spring Term 4		
THE 390	Theatre Practice II	1
THE 483	Senior Capstone Project	1
Elective Course		3
DTM or Performance, Major Elective Course		3
DTM or Performance, Major Elective Course		3
DTM or Performance, Major Elective Course		3
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students will demonstrate a knowledgeable awareness of the interconnectedness of theatre history, dramatic theory, and production practices. They will distinguish and apply terminologies, processes, and traditions specific to Theatre Arts.

2. Students will articulate insights about Theatre Arts and specific theatre events. Students will also demonstrate collaboration skills in production and performance leadership roles.
3. Students will demonstrate self-reflection; they will clearly articulate the role of theatre in their lives and their personal commitment to theatre as a professional vocation.
4. Students will articulate a personal philosophy about theatre practice, its cultural impact on society, and their responsibility as an artist.

Theatre Arts (M.F.A.) Master of Fine Arts. Major in Theatre Arts.

The Master of Fine Arts degree at the University of Idaho is a rigorous three-year, 60-72 hour degree designed for talented students wishing to prepare themselves for a career in the professional theatre. Degree tracks in areas of design, directing, performance and technical production are built around specific curriculum categories, and individual courses are selected by the candidate in consultation with their major professor. Student progress is monitored by portfolio review or performance jury each semester. Exit procedures from the program include a creative project and comprehensive exam.

Candidates must fulfill the general requirements of the College of Graduate Studies and a minimum of 60 credits from the course groupings listed below.

Studio Area (12-16 credits)

A minimum of 12 credits are taken in coursework directly related to an area of specialization. The studio area of study is individualized to the candidate's specific needs and areas of weakness. Candidates will enroll in the M.F.A. Studio each semester of residence excluding summers.

Related Studio Area (9-12 credits)

A minimum of 9 credits are taken in a related studio area which generally pertains directly to the candidate's area of specialization.

Craft Area (8-12 credits)

A minimum of 8 credits are taken in courses to develop specific skills associated with the studio area.

History/Literature/Criticism (9-12 credits)

A minimum of 9 credits are taken in history or literature courses which relate directly to the studio area. Courses taken to fulfill this requirement might include dramatic literature, social history, art history, architectural history, and theatre history.

Internship (12 credits)

A maximum of 12 credits of THE 598 are taken to augment coursework with professional experiences with professional regional theatres in the area.

M.F.A. Jury/Portfolio Review (5 credits)

A minimum of 5 credits of THE 515 must be completed with a grade of 'B' or better before the awarding of the degree. A maximum of 1 credit of THE 515 may be taken each semester.

M.F.A. Exit Procedures (3 credits)

Exit procedures vary with the area of specialization. In each case, the exit procedure revolves around a thesis project or exam completed sometime in the last two semesters of residence. Projects are designed

in consultation with the candidate's graduate committee. Candidates must enroll in THE 596 during the semester the project is undertaken.

Please see the Theatre graduate handbook for details and program requirements on earning the Master of Fine Arts in Theatre degree.

All MFAs should be able to:

1. Demonstrate mastery in understanding of relationship between theatre history, dramatic theory and practice.
2. Communicate expertly across the disciplines of playwriting, acting, directing, dramaturgy and design.
3. Ability to analyze a play text, understand characterization, and expertly express these ideas through performance, production and written or spoken criticism.
4. Self-evaluate, refine and improve performance or production.
5. Understand and advocate for the role of theatre and theatre artist within society.

Theatre Design and Technology Minor

Code	Title	Hours
THE 103	Theatre Technology	3
THE 104	Costume Technology	3
Select two courses from the following:		6
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	
Select 6 credits of electives from upper-division Technical Theatre course work		6
Total Hours		18

Courses to total 18 credits for this minor

Theatre Performance Minor

Code	Title	Hours
THE 105	Basics of Performance I	3
THE 106	Basics of Performance II	3
THE 305	Intermediate Acting I	3
THE 306	Intermediate Acting II	3
THE 471	Directing	3
Select one upper-division Elective		3
Total Hours		18

Courses to total 18 credits for this minor

General Studies

Director - Annette Folwell, Associate Dean (112 Admin. Bldg.; 208-885-5013)

The Bachelor of General Studies (BGS) program serves students in two ways: 1) it serves entering students who wish to examine multiple academic areas before selecting a major, and 2) it serves students who intend to pursue the BGS degree, having developed a coherent program of study with the assistance of their advisor. These students will be able to learn and integrate complex ideas across disciplinary lines and communicate these ideas in written and verbal forms. Students who have

declared a major in General Studies are strongly encouraged to utilize programs and services offered by the Career Center and the Counseling and Testing Center to assist them in identifying possible career paths and interests. Within their first year as a BGS major, students are advised to take a career exploration course. Particular attention is paid to identifying critical prerequisite courses so that students are able to enter a major on track for graduation.

Admission to the Program

New students wishing to enroll in the General Studies program may indicate their choice on the application form for admission to the university. Current students may transfer into the BGS major by submitting a change of curriculum form to the Registrar's Office.

General Regulations

Students participating in General Studies while exploring their choice of majors are strongly advised to complete courses that meet requirements as described in Regulation J of the General Catalog. At the same time, these students are strongly advised to select exploratory elective courses that will provide exposure to various academic programs at the UI. Students may transfer from General Studies to a new major at any time if they satisfy the prerequisites and grade-point requirements of that major. Students must have at least a 2.00 grade-point average to transfer into many of the university's colleges.

Bachelor's Degrees

- Bachelor of General Studies Curriculum (p. 346)

Associate's Degrees

- Associate of General Studies (p. 347)

Bachelor of General Studies Curriculum

The curriculum leading to the degree of Bachelor of General Studies is designed to provide maximum flexibility for undergraduates while planning their program of studies. Since the only specific subject requirements are the general university requirements, students can plan their programs to the best advantage of their particular educational objectives. This means that students must bear the major responsibility for their choice of courses. Those who plan wisely have the opportunity to obtain an excellent education. The key admonition is to plan your program carefully.

The major advantage of the B.G.S. degree program is the nonspecialized education. Although a student could take their work in a limited number of departments, the intent of this program is to permit great latitude in the choice of subjects so that students may satisfy their particular objectives. No student may become a candidate for the B.G.S. degree who has already earned a baccalaureate degree or who is a candidate for another degree offered by the university.

Major

No major other than "General Studies" will be certified on the student's diploma or official transcript. Students who wish to have a designated major should pursue a departmental baccalaureate degree (B.A., B.S., etc).

Minor

Students graduating with a Bachelor of General Studies may satisfy requirements for one or more minors. In these cases, their transcript will reflect these minors.

Degree Requirements

Required coursework includes the university requirements (see regulation J-3), a minimum of 45 upper-division credits, no more than 36 credits in any one discipline and:

Code	Title	Hours
INTR 401	Career and Leadership Development	2

Courses to total 120 credits for this degree

Suggestions to Students

Students are advised not to make a firm decision with respect to the B.G.S. degree before the end of the freshman year. During the freshman year, and probably during the sophomore year, students should consider following one of the curricula leading to a departmental baccalaureate degree, deviating from the departmental requirements only where it appears educationally advisable to do so.

It is very important that the student working toward the B.G.S. "look ahead" to see in which departments they wish to accumulate the required 45 credits in upper-division courses (those numbered 300 and above). Many upper-division courses have prerequisites that must be completed during the early semesters of the student's undergraduate career. If planning is delayed, it may be that some courses will be unavailable to the student because they have not taken the prerequisites.

1. Students will find and evaluate information regarding a complex concept in a field of study.
2. Students will articulate their knowledge and skills from different disciplines targeted towards a chosen career.
3. Students will locate, evaluate, incorporate, and properly cited multiple information resources in a paper or project.
4. Students will demonstrate an awareness and understanding of diverse cultures.

General Studies (A.A. or A.S.)

College Requirements for the A.A. Degree

Six credits in addition to the minimum university-wide general education requirements in humanities, or a nine-credit approved area of emphasis, or an academic certificate.

College Requirements for the A.S. Degree

Six credits in addition to the minimum university-wide general education requirements in social sciences, mathematics or statistics, or a nine-credit approved area of emphasis, or an academic certificate.

Students may not earn two associate degrees in General Studies.

Required course work includes the completion of General Education requirements (see regulation J-3), and:

Code	Title	Hours
INTR 201 or INTR 203	Major/Career Exploration and Decision Making Workshop	1
A certificate or a 12-credit advisor approved area of emphasis.		12-18
Total Hours		13-19

Courses to total 60 credits for this degree

Fall Term 1	Hours
COMM 101 Fundamentals of Oral Communication	3
ENGL 101 Writing and Rhetoric I	3
Mathematical Ways of Knowing Course	3
Social and Behavioral Ways of Knowing Course	3
Elective	3
Hours	15
Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
Scientific Ways of Knowing Course	4
Humanistic and Artistic Ways of Knowing Course	3
Elective	3
Elective	3
Hours	16
Fall Term 2	Hours
Scientific Ways of Knowing Course	4
American Diversity Course	3
Social and Behavioral Ways of Knowing Course	3
Elective	3
Elective	3
Hours	16
Spring Term 2	Hours
INTR 201 Major/Career Exploration and Decision Making	1
Humanistic and Artistic Ways of Knowing Course	3
International Course	3
Elective	3
Elective	3
Hours	13
Total Hours	60

1. Students will learn and evaluate information regarding a field of study.
2. Students will articulate an understanding of a concept in a written or verbal form and their knowledge and skills.
3. Students will locate, incorporate, and properly cited multiple information resources in a paper or project.

Lionel Hampton School of Music

Sean Butterfield, Director (205 Music Bldg. 83844-4015; phone 208-885-6231; music@uidaho.edu; www.uidaho.edu/music (http://www.uidaho.edu/music/)).

The Lionel Hampton School of Music, so designated in 1987 in honor of the eminent American jazz musician, is an accredited institutional member of the National Association of Schools of Music. Established as a department in 1893, it was elevated to school status in 1969.

The courses and curricula in music seek to prepare elementary, secondary, and college teachers of music; to train professional musicians; to enrich the cultural environment for students and provide liberal-arts instruction; and to engage in research in music performance

and teaching for the general benefit of the public and the discipline of music.

Students in this school learn by performing, listening, analyzing, and creating music. Emphasis is on the understanding of musical styles and techniques of all eras, including contemporary music. Musical studies balance the aesthetic and the practical, with ample opportunity for exploration and self-reliance.

The formal undergraduate curricula of the School of Music consist of degree programs in the following areas:

- Bachelor of Music in Performance
 - Specialization in voice, piano, guitar, or any orchestral instrument.
- Bachelor of Music in Composition
- Bachelor of Music in Music Education
 - Specialization in vocal music education or instrumental music education, with the option of adding a supplemental minor in vocal and instrumental music education.
- Bachelor of Music in Music Business
 - Core studies in music combined with studies in accounting, economics, statistics, management, and marketing.
- Bachelor of Arts in Applied Music
 - Applied music study can be in any of the areas of specialty listed under the Bachelor of Music in Performance.
- Bachelor of Science in Applied Music
 - Applied music study can be in any of the areas of specialty listed under the Bachelor of Music in Performance.

The B.Mus. degree is professionally oriented and is the normal preparation for graduate study in music or for teacher education. The B.A. and B.S. degrees emphasize a broad liberal-arts education. Acceptance to the B.Mus., B.A., or B.S. degree programs requires an audition. The School of Music also offers minors in music, jazz studies, vocal and instrumental music education (as a supplement for music education majors), and musical theatre. The ensembles and performing groups sponsored by the School of Music are open to all students, regardless of major.

The Music Building houses faculty studios, ensemble rehearsal areas, classrooms, an electronic music lab, a music education materials center, and a recital hall. Individual practice rooms are available in nearby Ridenbaugh Hall. Additional faculty offices are located in Blake House. Recording, radio-television, language listening lab, and computer facilities of the campus are also used by music students. In addition to organ, harpsichord, and piano practice instruments, the school maintains two performance pipe organs, three concert grand pianos, and a concert harpsichord.

The School of Music offers degrees at the master's level; Master of Music degrees are available in music education, performance, composition, choral conducting, collaborative piano, and piano pedagogy and performance studies. The Master of Arts option is in music history. Acceptance into the M.Mus. degree programs requires an audition, except in music education, which requires a supplementary information packet.

The school offers prospective graduate students a wide range of individual and group instruction opportunities as preparation for professional careers in music either as performers, composers, scholars, or music educators. Study is enriched through participation in recitals in

addition to participation in both small and large vocal and instrumental ensembles.

Admission to the Master of Music program varies by area of concentration. Please see the Lionel Hampton School of Music website (www.uidaho.edu/class/music/graduate (<http://www.uidaho.edu/class/music/graduate/>)) for the requisite application materials listed by concentration. Admission to the M.A. or M.Mus. program in this school normally requires a baccalaureate degree in music from an accredited institution. During the first semester of enrollment, a supervisory committee and a chair of that committee will be appointed. Students are encouraged, and in some cases required, to participate in one organized ensemble each academic session in residence.

Majors

- Applied Music (B.A. or B.S.) (p. 349)
- Music: Business (B.Mus.) (p. 354)
- Music: Composition (B.Mus.) (p. 355)
- Music: Performance (B.Mus.) (p. 356)
- Music Education (B.Mus.) (p. 352)

Minors

- Jazz Studies Minor (p. 351)
- Music Minor (p. 353)
- Musical Theatre Minor (p. 359)
- Vocal-Instrumental Music Education Minor (p. 360)

Music Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the School of Music. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Music (M.A.) (p. 351)
- Music (M.Mus.) (p. 352)

General Requirements for all B.A., B.S., and B.Mus. Degrees

Minimum Grade Requirement

A music student, either major or minor, must achieve a minimum grade of 'C' in each music course, either resident or transfer, which is applicable to a degree program in music before the student will be eligible for graduation.

Ensemble Participation

An undergraduate music major must:

1. Earn a minimum of eight credits in ensemble participation to be eligible for graduation, and
2. Enroll in an ensemble, to be assigned by the student's studio instructor, during each semester of full-time study on the University of Idaho Moscow Campus.

For curricular purposes, "ensemble" is defined to mean:

Code	Title	Hours
MUSA 116/316	Concert Choir--Vandaleers	1
MUSA 117/317	University Choir	1
MUSA 118/318	Jazz Choir	1
MUSA 119/319	Marching Band	1-3
MUSA 120/320	Wind Ensemble	1
MUSA 121/321	Concert Band	1
MUSA 122/322	Orchestra	1
MUSA 123/323	Jazz Ensemble	1
MUSA 180/380	Opera/Musical Theatre Studio	1
MUSA 315	Collaborative Piano	1
MUSA 365	Chamber Ensemble	1

- Transfer students must have a minimum of four semesters of ensemble participation at U of I.

Convocation-Recital Attendance

Because listening experiences constitute an area of major importance in the study of music, all music majors and music minors are required to register for MUSX 140; music majors must attend 10 recitals per semester for seven semesters and music minors must attend 10 recitals per semester for two semesters. Transfer students must pass MUSX 140 during each semester of full-time study on the University of Idaho Moscow Campus. Students must attend a full concert or program in order for it to be counted toward convocation-recital requirements. Recital credit will not be granted for those performances in which a student participates. In addition, music majors must attend the weekly convocation series (studio class, area recital, and convocation).

Upper-Division Standing (UDS)

For a B.Mus., B.A., and B.S. music major to enroll in MUSA 324, MUSA 334, or MUSC 425, the student must have been granted upper-division standing (UDS). Students applying for UDS must:

1. Have completed with a 'C' or better, or be currently enrolled in, one semester of MUSA 115 and three semesters of MUSA 124 or MUSA 134 (depending on the student's degree program), MUSA 146, MUSC 140, MUSC 142, MUSH 111, and a grade of 'P' in MUSX 101.
2. Have passed a special jury examination demonstrating mastery of the fundamentals of the student's major area of performance/composition and the potential to continue improving in a manner that will lead to the successful completion of performance/composition requirements of the degree and major emphasis (the jury examination requirement must be met, regardless of double majors, before a student can enroll in MUSA 324 or MUSA 334).

An Upper Division Standing jury examination presented after the second week will not count towards the semester in which it was presented. Students who fail to pass the UDS requirements within two tries are ineligible to continue to pursue a music major.

Diagnostic Exam in Theory and Aural Skills

The goal of these exams, required for all transfer students whose major is music, is to place transfer students in the appropriate level of music theory, aural skills, and piano according to their abilities regardless of their prior training. Study guides are available on the web. The exams are given during the first week of classes each semester as needed.

The exam will not be used for "credit by examination," as the regulations regarding these procedures are covered in regulation D-4 (p. 73). Written evaluation of each student's achievement will be placed in their advising file, and students will be admitted to required courses at their ability level.

Transfer Credits

Transfer credits will be accepted at the upper-division level only if taken at the upper-division level from the original institution (i.e., a 100- or 200-level course will not transfer as a 300- or 400-level course requirement). The applicability of these credits to the student's program of study is determined by the Lionel Hampton School of Music.

Applied Music (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)), the General Requirements for B.A. or B.S. Music Degrees (p. 348), the CLASS requirements for the B.A. or B.S. degree, and:

Code	Title	Hours
MUSA 115	Studio Instruction	2
MUSA 124	Studio Instruction (6 credits are required in major instrument or voice)	6
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSA 208	Musical Conversation and Improvisation	1
MUSA 324	Studio Instruction (4 credits are required in major instrument or voice)	4
MUSA 490	Half Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	2
MUSC 240	Aural Skills IV	2
MUSC 241	Theory of Music III	2
MUSC 242	Theory Of Music IV	2
MUSH 111	Introduction to the World of Music	3
MUSH 321	Music in Society I	3
MUSH 322	Music in Society II	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required.)	0
MUSX 250	Introduction to Career Skills in Music	2
Select MusA Ensembles in 8 different semesters ¹		8
Total Hours		50

Note: Students whose primary instrument is voice must substitute MUSX 283-MUSX 284 Diction for Singers for four credits of non-music electives, thus reducing the non-music credits from 66 to 62.

Courses to total 120 credits for this degree and include at least 66 credits in non-music courses.

1

Keyboard majors: of these eight, two semesters must be MUSA 315 Collaborative Piano.

Guitar majors: of these eight, two semesters must be MUSA 365 Chamber Ensemble.

Applied Music (B.A.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MUSA 115	Studio Instruction	2
MUSA 145	Piano Class for Music Majors/Minors	1
MUSC 139	Aural Skills I	2
MUSC 141	Theory of Music I	2
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance	0
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1

Hours 17

Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
MUSA 124	Studio Instruction	2
MUSA 146	Piano Class for Music Majors/Minors	1
MUSC 140	Aural Skills II	2
MUSC 142	Theory of Music II	2
MUSX 140	Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1
Humanistic and Artistic Ways of Knowing Course		3

Hours 14

Fall Term 2		Hours
MUSA 124	Studio Instruction	2
MUSA 208	Musical Conversation and Improvisation	1
MUSC 239	Aural Skills III	2
MUSC 241	Theory of Music III	2
MUSH 111	Introduction to the World of Music	3
MUSX 140	Recital Attendance	0
MUSX 250	Introduction to Career Skills in Music	2
Social and Behavioral Ways of Knowing Course		3
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1

Hours 16

Spring Term 2		Hours
MUSA 124	Studio Instruction	2
MUSC 240	Aural Skills IV	2
MUSC 242	Theory Of Music IV	2
MUSX 140	Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4

Hours 14

Fall Term 3		Hours
MUSA 324	Studio Instruction	2
MUSH 321	Music in Society I	3
MUSX 140	Recital Attendance	0

MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101	4
Scientific Ways of Knowing Course	4

Hours 14

Spring Term 3		Hours
MUSA 324	Studio Instruction	2
MUSH 322	Music in Society II	3
MUSX 140	Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
American Diversity Course		3
B.A. Course Requirement		3

Hours 16

Fall Term 4		Hours
MUSX 140	Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
International Course		3
B.A. Course Requirement		3
Elective Course		3

Hours 14

Spring Term 4		Hours
MUSA 490	Half Recital	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
B.A. Course Requirement		3
Elective Course		3
Elective Course		3
Elective Course		1

Hours 15

Total Hours 120

Applied Music (B.S.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MUSA 115	Studio Instruction	2
MUSA 145	Piano Class for Music Majors/Minors	1
MUSC 139	Aural Skills I	2
MUSC 141	Theory of Music I	2
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1
Mathematical Ways of Knowing Course		3
Oral Communication Course		3

Hours 17

Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
MUSA 124	Studio Instruction	2
MUSA 146	Piano Class for Music Majors/Minors	1
MUSC 140	Aural Skills II	2
MUSC 142	Theory of Music II	2
MUSX 140	Recital Attendance	0

MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
Humanistic and Artistic Ways of Knowing Course	3
Hours	14
Fall Term 2	
MUSA 124 Studio Instruction	2
MUSA 208 Musical Conversation and Improvisation	1
MUSC 239 Aural Skills III	2
MUSC 241 Theory of Music III	2
MUSH 111 Introduction to the World of Music	3
MUSX 140 Recital Attendance	0
MUSX 250 Introduction to Career Skills in Music	2
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
Social and Behavioral Ways of Knowing Course	3
Hours	16
Spring Term 2	
MUSA 124 Studio Instruction	2
MUSA 246 Piano Class for Music Majors/Minors	1
MUSC 240 Aural Skills IV	2
MUSC 242 Theory Of Music IV	2
MUSX 140 Recital Attendance	0
Social and Behavioral Ways of Knowing Course	3
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
Scientific Ways of Knowing Course	4
Hours	15
Fall Term 3	
MUSA 324 Studio Instruction	2
MUSH 321 Music in Society I	3
MUSX 140 Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
B.S. Course Requirement	3
Scientific Ways of Knowing Course	4
Elective Course	1
Hours	14
Spring Term 3	
MUSA 324 Studio Instruction	2
MUSH 322 Music in Society II	3
MUSX 140 Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
American Diversity Course	3
B.S. Course Requirement	3
Elective Course	3
Hours	15
Fall Term 4	
MUSA 324 Studio Instruction	2
MUSX 140 Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
International Course	3
B.S. Course Requirement	3
Elective Course	3
Elective Course	3
Hours	15

Spring Term 4		
MUSA 324	Studio Instruction	2
MUSA 490	Half Recital	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322		1
B.S. Course Requirement		3
Elective Course		3
Elective Course		3
Elective Course		2
Hours		14
Total Hours		120

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1. The student will be able to interpret and present musical ideas through performance.
2. The student will demonstrate expertise in major performing medium.
3. The student will be able to communicate musical ideas verbally.
4. The student will be able to self-assess performance skills accurately.
5. The student will demonstrate the ability to explain music in the context of wider culture.

Jazz Studies Minor

Code	Title	Hours
MUSA 210	Jazz Improvisation	2
MUSA 212	Introduction to Jazz Piano I	1
MUSA 213	Introduction to Jazz Piano II	1
MUSA 410	Advanced Jazz Improvisation	2
MUSA 492	Elective Half Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 329	Theoretical Basis of Jazz	2
MUSH 410	Studies in Jazz History	3
Select 7 credits of Jazz electives from the following:		7
Electives in Jazz Ensembles		
Jazz Combos		
MUST 465	Jazz Band Rehearsal Techniques	
Total Hours		26

Courses to total 26 credits for this minor

Music (M.A.)

Master of Arts. Major in Music.

General M.A. requirements apply. Applicants for the M.A. degree may concentrate in music history. A reading competency in one foreign

language is required. Admission to the program is by permission of the music history faculty.

Please see the Lionel Hampton School of Music graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/class/departments/lhsom/graduate/lhsom-graduate-student-handbook.pdf>) for details and program requirements on earning the Master of Arts in Music degree.

1. The student will be able to demonstrate expertise in academic writing.
2. The student will be able to place music in cultural and historical context.

Music (M.Mus.)

Master of Music. Major in Music.

Applicants for the M.Mus. degree may concentrate in music education; performance (with degree patterns in brass, choral conducting, keyboard, percussion, strings, voice and woodwinds); composition; piano pedagogy and performance studies; or collaborative piano. Admission to the Master of Music program varies by the area of concentration. Please see the Lionel Hampton School of Music website (<https://www.uidaho.edu/class/music/>) for the requisite application materials listed by concentration. Except for students enrolled in the Master of Music with a concentration in Music Education, all graduate music students must complete at least 18 semester hours of credit towards the Master of Music degree in residence on the University of Idaho Moscow campus.

Please see the Lionel Hampton School of Music graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/class/departments/lhsom/graduate/lhsom-graduate-student-handbook.pdf>) for details and program requirements on earning the Master of Music degree.

1. The student will be able to interpret and present musical ideas through performance.
2. The student will be able to demonstrate expertise in major performing medium.
3. The student will be able to demonstrate proficiency in reading music.

Music Education (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
EDCI 201	Contexts of Education	3
EDCI 301	Learning, Development, and Assessment	3
EDSP 300	Educating for Exceptionalities	3
MUSA 115	Studio Instruction	2
MUSA 124	Studio Instruction (6 credits are required)	6
MUSA 208	Musical Conversation and Improvisation	1
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 324	Studio Instruction (6 credits are required)	6
MUSA 387	Conducting I	2
MUSA 487	Conducting II	2

MUSA 490	Half Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	2
MUSC 240	Aural Skills IV	2
MUSC 241	Theory of Music III	2
MUSC 242	Theory Of Music IV	2
MUSC 328	Instrumental and Choral Arranging	2
MUSH 111	Introduction to the World of Music	3
MUSH 321	Music in Society I	3
MUSH 322	Music in Society II	3
MUST 283	Principles of Music Teaching	3
MUST 382	Elementary Music Methods and Literacy	3
MUST 432	Practicum: Music Teaching	11
MUST 445	Proseminar in Music Teaching	1
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required)	0
8 credits of Ensembles in 7 different semesters		8
Select one of the following tracks:		10

Instrumental track:

MUST 251	String Instrument Techniques	
MUST 253	Brass Instrument Techniques	
MUST 254	Percussion Techniques	
MUST 255	Woodwind Techniques	
MUST 386	Instrumental Music in the Secondary Schools	
MUST 465	Jazz Band Rehearsal Techniques	

One of the following:

String majors must take:

MUST 256	String Pedagogy and Orchestral Literature	
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Wind and percussion majors must take:

MUST 466	Marching Band Techniques	
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Vocal track:

MUSA 114	Studio Instruction ¹	
MUST 385	Choral Music in the Secondary School	
MUST 435	Pedagogy & Materials	
MUSX 283	Italian and German Diction for Singers	
MUSX 284	French and English Diction for Singers	

Total Hours **96**

¹

Voice majors must successfully complete MUSA 246 before enrolling in MUSA 114.

Courses to total 120 credits for this degree

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MUSA 115 Studio Instruction	2
MUSA 145 Piano Class for Music Majors/Minors	1
MUSC 139 Aural Skills I	2
MUSC 141 Theory of Music I	2
MUSX 101 Orientation for Music Majors	0
MUSX 140 Recital Attendance	0

Mathematical Ways of Knowing Course	3
Ensemble, Major Elective Course	1
Hours	14
Spring Term 1	
COMM 101 Fundamentals of Oral Communication	3
ENGL 102 Writing and Rhetoric II	3
MUSA 124 Studio Instruction	2
MUSA 146 Piano Class for Music Majors/Minors	1
MUSC 140 Aural Skills II	2
MUSC 142 Theory of Music II	2
MUSH 111 Introduction to the World of Music	3
MUSX 140 Recital Attendance	0
Ensemble, Major Elective Course	1
Hours	17
Fall Term 2	
EDCI 201 Contexts of Education	3
MUSA 124 Studio Instruction	2
MUSA 245 Piano Class for Music Majors/Minors	1
MUSC 239 Aural Skills III	2
MUSC 241 Theory of Music III	2
MUSH 321 Music in Society I	3
MUSX 140 Recital Attendance	0
Ensemble, Major Elective Course	1
American Diversity Course	3
Hours	17
Spring Term 2	
EDSP 300 Educating for Exceptionalities	3
MUSA 124 Studio Instruction	2
MUSA 246 Piano Class for Music Majors/Minors	1
MUSC 240 Aural Skills IV	2
MUSC 242 Theory Of Music IV	2
MUSH 322 Music in Society II	3
MUSX 140 Recital Attendance	0
Ensemble, Major Elective Course	1
Vocal or Instrumental Track Course, Major Elective Course	2
Hours	16
Fall Term 3	
EDCI 301 Learning, Development, and Assessment	3
MUSA 208 Musical Conversation and Improvisation	1
MUSA 324 Studio Instruction	2
MUSA 387 Conducting I	2
MUSX 140 Recital Attendance	0
Ensemble, Major Elective Course	1
International Course	3
Vocal or Instrumental Track Course, Major Elective Course	2
Hours	14
Spring Term 3	
MUSA 324 Studio Instruction	2
MUSA 487 Conducting II	2
MUSC 328 Instrumental and Choral Arranging	2
MUST 382 Elementary Music Methods and Literacy	3
MUSX 140 Recital Attendance	0
Scientific Ways of Knowing Course	4
Ensemble, Major Elective Course	1
Vocal or Instrumental Track Course, Major Elective Course	2
Hours	16
Fall Term 4	
MUSA 324 Studio Instruction	2
MUSA 490 Half Recital	0
MUSX 140 Recital Attendance	0
Scientific Ways of Knowing Course	4

Humanistic and Artistic Ways of Knowing Course	3
Ensemble, Major Elective Course	1
Vocal or Instrumental Track Course, Major Elective Course	2
Vocal or Instrumental Track Course, Major Elective Course	2
Hours	14
Spring Term 4	
MUST 432 Practicum: Music Teaching	11
MUST 445 Proseminar in Music Teaching	1
Hours	12
Total Hours	120

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1. Interpret and present musical ideas through performance .
2. Demonstrate expertise in major performing medium.
3. Clearly articulate musical concepts appropriate for learners in all stages of development.
4. Assess musical standards, prescribe methods for improvement and demonstrate rehearsal technique.
5. Demonstrate appropriate conducting technique.
6. Demonstrate an ability to use multiple teaching strategies to serve diverse learners.
7. Develop skills of planning and preparation, including setting short- and long-term goals.

Music Minor

Code	Title	Hours
MUSA 114	Studio Instruction (4 cr are required)	4
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSI 100	Introduction to Music	3
	or MUSH 111 Introduction to the World of Music	
MUSX 140	Recital Attendance (Two semesters required)	0
Select 4 credits of Music electives ¹		4
Total Hours		21

Courses to total 21 credits for this minor

1

Ensemble participation is recommended to meet the music electives requirement. Two credits of a major vocal ensemble (University Chorus or Vandaleers) are required for a music minor whose studio instruction is in voice.

Music: Business (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
ECON 202	Principles of Microeconomics	3-4
or ECON 272	Foundations of Economic Analysis	
MHR 311	Introduction to Management	3
MKTG 321	Marketing	3
MUSA 115	Studio Instruction	2
MUSA 124	Studio Instruction (3 Courses of MUSA 124 to total 6 cr should be taken)	6
MUSA 208	Musical Conversation and Improvisation	1
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 324	Studio Instruction (3 courses of MUSA 324 to total 6 cr should be taken)	6
Select MusA Ensembles in 8 different semesters ¹		8
MUSA 490	Half Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	2
MUSC 240	Aural Skills IV	2
MUSC 241	Theory of Music III	2
MUSC 242	Theory Of Music IV	2
MUSH 111	Introduction to the World of Music	3
MUSH 321	Music in Society I	3
MUSH 322	Music in Society II	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required)	0
MUSX 250	Introduction to Career Skills in Music	2
MUSX 410	Current Topics in Music Business	3
Select one of the following:		1-12
MUSX 350	Co-Op Professional Seminar	
MUSX 498	Internship	
One of the following options:		15
Option 1: Select 15 credits from the following:		
MHR 411	Acquiring Human Capital	
MHR 417	Deploying and Developing Human Capital	
ORGS 255	Financial Literacy	
ORGS 210	Introduction to Organizational Sciences	
ORGS 305	Nonprofit Organizations	
ORGS 320	Budgeting for Small Organizations	
ORGS 407	Advanced Nonprofit Organizations	
ORGS 415	Planning Professional Conferences and Events	
PSYC 441	Human Relations in the Workplace	
Option 2:		
ACCT 482	Enterprise Accounting	

ENTR 414	Entrepreneurship
ENTR 415	New Venture Creation
and select 6 credits from the following:	
BUS 429	Vandal Solutions
MIS 353	Application Development
OM 378	Project Management
OM 456	Enterprise Quality Management
Total Hours	86-98

1

See "Ensemble participation (p. 348)" for requirements.

Courses to total 120 credits for this degree

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MUSA 115 Studio Instruction	2
MUSA 145 Piano Class for Music Majors/Minors	1
MUSC 139 Aural Skills I	2
MUSC 141 Theory of Music I	2
MUSX 101 Orientation for Music Majors	0
MUSX 140 Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
Mathematical Ways of Knowing Course	3
Oral Communication Course	3
Hours	17
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
MUSA 124 Studio Instruction	2
MUSA 146 Piano Class for Music Majors/Minors	1
MUSC 140 Aural Skills II	2
MUSC 142 Theory of Music II	2
MUSH 111 Introduction to the World of Music	3
MUSX 140 Recital Attendance	0
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
Social and Behavioral Ways of Knowing Course	3
Hours	17
Fall Term 2	
ACCT 201 Introduction to Financial Accounting	3
MUSA 124 Studio Instruction	2
MUSA 245 Piano Class for Music Majors/Minors	1
MUSC 239 Aural Skills III	2
MUSC 241 Theory of Music III	2
MUSX 140 Recital Attendance	0
MUSH 321 Music in Society I	3
MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322	1
Hours	14
Spring Term 2	
ACCT 202 Introduction to Managerial Accounting	3
MUSA 124 Studio Instruction	2
MUSA 246 Piano Class for Music Majors/Minors	1
MUSC 240 Aural Skills IV	2
MUSC 242 Theory Of Music IV	2
MUSX 140 Recital Attendance	0
ECON 202 OR ECON 272	3
MUSH 322 Music in Society II	3

MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322 1

Hours 17

Fall Term 3

MUSA 208	Musical Conversation and Improvisation	1
MUSA 324	Studio Instruction	2
MUSX 140	Recital Attendance	0
MUSX 250	Introduction to Career Skills in Music	2

MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322 1

Humanistic and Artistic Ways of Knowing Course 3

Scientific Ways of Knowing Course 4

Option Elective, Major Elective Course 3

Hours 16

Spring Term 3

MHR 311	Introduction to Management	3
MUSA 324	Studio Instruction	2
MUSX 140	Recital Attendance	0

MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322 1

Option Elective, Major Elective Course 3

American Diversity Course 3

International Course 3

Hours 15

Fall Term 4

MKTG 321	Marketing	3
MUSA 324	Studio Instruction	2
MUSX 140	Recital Attendance	0
MUSX 410	Current Topics in Music Business	3

MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322 1

Option Elective, Major Elective Course 3

Scientific Ways of Knowing Course 4

Hours 13

Spring Term 4

MUSA 490	Half Recital	0
MUSX 350 OR MUSX 498		3

MUSA 116 OR MUSA 117 OR MUSA 119 OR MUSA 120 OR MUSA 121 OR MUSA 122 OR MUSA 316 OR MUSA 317 OR MUSA 319 OR MUSA 320 OR MUSA 321 OR MUSA 322 1

Option Elective, Major Elective Course 3

Option Elective, Major Elective Course 3

Option Elective, Major Elective Course 3

Hours 13

Total Hours 122

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1. Interpret and present musical ideas through performance
2. Demonstrate proficiency in major performing medium
3. Communicate musical ideas verbally
4. Demonstrate understanding and application of financial principles

5. Create and enact a business plan appropriate to degree emphasis

6. Communicate effectively using online media (e.g. web design, electronic media)

Music: Composition (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
MUSA 114	Studio Instruction (2 cr required in secondary performing medium) ¹	2
MUSA 115	Studio Instruction (primary performing medium)	2
MUSA 124	Studio Instruction (6 cr required in primary performing medium)	6
MUSA 208	Musical Conversation and Improvisation	1
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 314	Studio Instruction (2 cr required in primary performing medium)	2
MUSA 387	Conducting I	2
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 225	Composition (4 credits are required)	4
MUSC 239	Aural Skills III	2
MUSC 240	Aural Skills IV	2
MUSC 241	Theory of Music III	2
MUSC 242	Theory Of Music IV	2
MUSC 328	Instrumental and Choral Arranging	2
MUSC 331	Counterpoint	3
MUSC 425	Composition (8 credits are required)	8
MUSC 424	Electronic Music I	2
MUSC 426	Electronic Music II	2
MUSC 442	Musical Analysis	2
MUSC 490	Senior Recital	0
MUSH 111	Introduction to the World of Music	3
MUSH 321	Music in Society I	3
MUSH 322	Music in Society II	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required)	0
MUSX 250	Introduction to Career Skills in Music	2
Select one MUSH elective at the 400 level		3
Select 8 different semesters of Ensembles		8
In addition to the requirements above, select music electives to reach a total of 82 credits in music:		4
Total Hours		82

1

2 credits required in secondary performing medium; if primary performing medium is other than piano, piano is suggested for the secondary area.

Courses to total 120 credits for this degree

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MUSA 115	Studio Instruction	2
MUSA 145	Piano Class for Music Majors/Minors	1
MUSC 139	Aural Skills I	2
MUSC 141	Theory of Music I	2
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance	0
Mathematical Ways of Knowing Course		3
Ensemble, Major Elective Course		1
Hours		14
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
MUSA 124	Studio Instruction	2
MUSA 146	Piano Class for Music Majors/Minors	1
MUSC 140	Aural Skills II	2
MUSC 142	Theory of Music II	2
MUSH 111	Introduction to the World of Music	3
MUSX 140	Recital Attendance	0
Ensemble, Major Elective Course		1
Hours		14
Fall Term 2		Hours
MUSA 124	Studio Instruction	2
MUSA 245	Piano Class for Music Majors/Minors	1
MUSC 225	Composition	2
MUSC 239	Aural Skills III	2
MUSC 241	Theory of Music III	2
MUSX 140	Recital Attendance	0
MUSX 250	Introduction to Career Skills in Music	2
MUSA 208	Musical Conversation and Improvisation	1
Social and Behavioral Ways of Knowing Course		3
Ensemble, Major Elective Course		1
Hours		16
Spring Term 2		Hours
MUSA 124	Studio Instruction	2
MUSA 246	Piano Class for Music Majors/Minors	1
MUSC 240	Aural Skills IV	2
MUSC 242	Theory Of Music IV	2
MUSH 322	Music in Society II	3
MUSX 140	Recital Attendance	0
Scientific Ways of Knowing Course		4
Ensemble, Major Elective Course		1
Hours		15
Fall Term 3		Hours
MUSA 114	Studio Instruction	1
MUSA 314	Studio Instruction	1
MUSA 387	Conducting I	2
MUSC 425	Composition	2
MUSH 321	Music in Society I	3
MUSX 140	Recital Attendance	0
Scientific Ways of Knowing Course		4
Ensemble, Major Elective Course		1
Elective Course		2
Hours		16
Spring Term 3		Hours
MUSA 114	Studio Instruction	1
MUSA 314	Studio Instruction	1
MUSC 328	Instrumental and Choral Arranging	2
MUSC 425	Composition	2
MUSC 426	Electronic Music II	2
MUSX 140	Recital Attendance	0

Social and Behavioral Ways of Knowing Course		3
International Course		3
Ensemble, Major Elective Course		1
Hours		15
Fall Term 4		Hours
MUSC 331	Counterpoint	3
MUSC 425	Composition	2
MUSX 140	Recital Attendance	0
MUSC 424	Electronic Music I	2
400-level Music History, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
MUSA 118 OR MUSA 318 OR MUSA 323 OR MUSA 365		1
Ensemble, Major Elective Course		1
Hours		15
Spring Term 4		Hours
MUSC 425	Composition	2
MUSC 442	Musical Analysis	2
MUSC 490	Senior Recital	0
American Diversity Course		3
Oral Communication Course		3
Music, Major Elective Course		3
MUSA 118 OR MUSA 318 OR MUSA 323 OR MUSA 365		1
Ensemble, Major Elective Course		1
Hours		15
Total Hours		120

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1. Demonstrate an ability to employ traditional and contemporary techniques and notation.
2. Demonstrate an ability to produce a concert of one's own music through collaboration.

Music: Performance (B.Mus.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
MUSA 115	Studio Instruction	2
MUSA 208	Musical Conversation and Improvisation	1
MUSA 246	Piano Class for Music Majors/Minors	1
MUSA 387	Conducting I	2
MUSA 491	Recital	0
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSC 142	Theory of Music II	2
MUSC 239	Aural Skills III	2
MUSC 240	Aural Skills IV	2
MUSC 241	Theory of Music III	2
MUSC 242	Theory Of Music IV	2
MUSC 442	Musical Analysis	2

MUSH 111	Introduction to the World of Music	3
MUSH 321	Music in Society I	3
MUSH 322	Music in Society II	3
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance (Seven semesters required)	0
MUSX 250	Introduction to Career Skills in Music	2

Option

Select one of the following options:	35-45
Keyboard (p. 357)	
Instrumental (p. 357)	
Vocal (p. 357)	

Total Hours **70-80**

A. Keyboard Option

Code	Title	Hours
MUSA 134	Studio Instruction (9 credits are required)	9
MUSA 212	Introduction to Jazz Piano I	1
MUSA 315	Collaborative Piano	3
MUSA 334	Studio Instruction (12 credits required)	12
MUSA 455	Keyboard Performance Practices	1
MUSA 490	Half Recital	0
MUSH 454	Keyboard Repertoire I	2
MUSH 455	Keyboard Repertoire II	2
MUST 436	Pedagogy and Materials: Keyboard I	2
MUST 437	Pedagogy and Materials: Keyboard II	2
Five semesters of ensembles		5
Select one MUSH elective at the 400-level		3
1 credit of Music Elective to reach 78 credits in Music		1
Total Hours		43

Courses to total 120 credits for this degree

B. Instrumental Option

Code	Title	Hours
MUSA 134	Studio Instruction (9 credits are required)	9
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 334	Studio Instruction (12 credits are required)	12
MUSA 490	Half Recital	0
MUSH 451	Repertoire	2
Eight semesters of Ensembles		8
Select one MUSH elective at the 400-level		3
8 credits of Music Electives to reach 78 credits in Music		8
Total Hours		43

1

MUSH 451: Saxophone majors may take MUSH 410 in place of MUSH 451.

Courses to total 120 credits for this degree

C. Vocal Option

Code	Title	Hours
MUSA 134	Studio Instruction (9 credits are required)	9
MUSA 334	Studio Instruction (12 credits are required)	12
MUSA 245	Piano Class for Music Majors/Minors	1
MUSA 490	Half Recital	0
MUSH 452	Solo Vocal Repertoire	2
MUST 435	Pedagogy & Materials	2
MUSX 283	Italian and German Diction for Singers	2
MUSX 284	French and English Diction for Singers	2
Eight semesters of ensembles		8
Select three semesters of French or German, or two semesters of French and one of German, or two semesters of German and one of French.		12
Select one MUSH elective at the 300 or 400 Level		3
Total Hours		53

Courses to total 120 credits for this degree

Keyboard Option

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MUSA 115	Studio Instruction	2
MUSA 145	Piano Class for Music Majors/Minors	1
MUSC 139	Aural Skills I	2
MUSC 141	Theory of Music I	2
MUSX 101	Orientation for Music Majors	0
MUSX 140	Recital Attendance	0
Mathematical Ways of Knowing Course		3
Major Elective Course		1
Ensemble, Major Elective Course		1
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
MUSA 134	Studio Instruction	3
MUSC 140	Aural Skills II	2
MUSC 142	Theory of Music II	2
MUSH 111	Introduction to the World of Music	3
MUSX 140	Recital Attendance	0
MUSA 246	Piano Class for Music Majors/Minors	1
Ensemble, Major Elective Course		1
Hours		15
Fall Term 2		
MUSA 134	Studio Instruction	3
MUSC 239	Aural Skills III	2
MUSC 241	Theory of Music III	2
MUSH 321	Music in Society I	3
MUSX 140	Recital Attendance	0
MUSA 212	Introduction to Jazz Piano I	1
Social and Behavioral Ways of Knowing Course		3
Ensemble, Major Elective Course		1
Hours		15
Spring Term 2		
MUSA 134	Studio Instruction	3
MUSH 322	Music in Society II	3
MUSC 240	Aural Skills IV	2
MUSC 242	Theory Of Music IV	2
MUSX 140	Recital Attendance	0

Scientific Ways of Knowing Course	4
Ensemble, Major Elective Course	1
Hours	15
Fall Term 3	
MUSA 334 Studio Instruction	3
MUSA 387 Conducting I	2
MUSX 140 Recital Attendance	0
MUSA 208 Musical Conversation and Improvisation	1
MUSX 250 Introduction to Career Skills in Music	2
MUSH 454 Keyboard Repertoire I	2
Scientific Ways of Knowing Course	4
Elective Course	1
Ensemble, Major Elective Course	1
Hours	16
Spring Term 3	
MUSA 315 Collaborative Piano	1
MUSA 334 Studio Instruction	3
MUSC 442 Musical Analysis	2
MUSX 140 Recital Attendance	0
MUSH 455 Keyboard Repertoire II	2
MUSA 490 Half Recital	0
American Diversity Course	3
Oral Communication Course	3
400-level Music History, Major Elective Course	3
Hours	17
Fall Term 4	
MUSA 315 Collaborative Piano	1
MUSA 334 Studio Instruction	3
MUST 436 Pedagogy and Materials: Keyboard I	2
MUSX 140 Recital Attendance	0
MUSA 455 Keyboard Performance Practices	1
Humanistic and Artistic Ways of Knowing Course	3
International Course	3
Hours	13
Spring Term 4	
MUSA 315 Collaborative Piano	1
MUSA 334 Studio Instruction	3
MUSA 491 Recital	0
MUST 437 Pedagogy and Materials: Keyboard II	2
Social and Behavioral Ways of Knowing Course	3
Elective Course	2
Music, 1 credit Major Elective Course	1
400-Level Music History, Major Elective Course	2
Hours	14
Total Hours	120

Instrumental Option

Fall Term 1		Hours
ENGL 101 Writing and Rhetoric I	3	
MUSA 115 Studio Instruction	2	
MUSA 145 Piano Class for Music Majors/Minors	1	
MUSC 139 Aural Skills I	2	
MUSC 141 Theory of Music I	2	
MUSX 101 Orientation for Music Majors	0	
MUSX 140 Recital Attendance	0	
Mathematical Ways of Knowing Course	3	
Ensemble, Major Elective Course	1	
Hours	14	
Spring Term 1		
ENGL 102 Writing and Rhetoric II	3	
MUSA 134 Studio Instruction	3	

MUSA 146 Piano Class for Music Majors/Minors	1
MUSC 140 Aural Skills II	2
MUSC 142 Theory of Music II	2
MUSH 111 Introduction to the World of Music	3
MUSX 140 Recital Attendance	0
Ensemble, Major Elective Course	1
Hours	15
Fall Term 2	
MUSA 134 Studio Instruction	3
MUSA 245 Piano Class for Music Majors/Minors	1
MUSC 239 Aural Skills III	2
MUSC 241 Theory of Music III	2
MUSH 321 Music in Society I	3
MUSX 140 Recital Attendance	0
Social and Behavioral Ways of Knowing Course	3
Ensemble, Major Elective Course	1
Hours	15
Spring Term 2	
MUSA 134 Studio Instruction	3
MUSA 246 Piano Class for Music Majors/Minors	1
MUSC 240 Aural Skills IV	2
MUSC 242 Theory Of Music IV	2
MUSH 322 Music in Society II	3
MUSX 140 Recital Attendance	0
Scientific Ways of Knowing Course	4
Ensemble, Major Elective Course	1
Hours	16
Fall Term 3	
MUSA 334 Studio Instruction	3
MUSA 387 Conducting I	2
MUSA 208 Musical Conversation and Improvisation	1
MUSX 140 Recital Attendance	0
MUSX 250 Introduction to Career Skills in Music	2
Scientific Ways of Knowing Course	4
Music, Major Elective Course	1
Ensemble, Major Elective Course	1
Hours	14
Spring Term 3	
MUSA 334 Studio Instruction	3
MUSA 490 Half Recital	0
MUSC 442 Musical Analysis	2
MUSX 140 Recital Attendance	0
400-level Music History, Major Elective Course	3
Oral Communication Course	3
Music, Elective Course	3
Music, Major Elective Course	1
Ensemble, Major Elective Course	1
Hours	16
Fall Term 4	
MUSA 334 Studio Instruction	3
MUSX 140 Recital Attendance	0
Humanistic and Artistic Ways of Knowing Course	3
International Course	3
Music, Major Elective Course	3
Elective Course	2
Ensemble, Major Elective Course	1
Hours	15
Spring Term 4	
MUSA 334 Studio Instruction	3
MUSA 491 Recital	0
MUSH 451 Repertoire	2

Elective Course	3
Social and Behavioral Ways of Knowing Course	3
Music, Major Elective Course	3
Ensemble, Major Elective Course	1
Hours	15
Total Hours	120

Vocal Option

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MUSA 115 Studio Instruction	2
MUSA 145 Piano Class for Music Majors/Minors	1
MUSC 139 Aural Skills I	2
MUSC 141 Theory of Music I	2
MUSX 101 Orientation for Music Majors	0
MUSX 140 Recital Attendance	0
Mathematical Ways of Knowing Course	3
Ensemble, Major Elective Course	1
Hours	14

Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
MUSA 134 Studio Instruction	3
MUSA 146 Piano Class for Music Majors/Minors	1
MUSC 140 Aural Skills II	2
MUSC 142 Theory of Music II	2
MUSH 111 Introduction to the World of Music	3
MUSX 140 Recital Attendance	0
Ensemble, Major Elective Course	1
Hours	15

Fall Term 2	Hours
MUSA 134 Studio Instruction	3
MUSA 245 Piano Class for Music Majors/Minors	1
MUSC 239 Aural Skills III	2
MUSC 241 Theory of Music III	2
MUSH 321 Music in Society I	3
MUSX 140 Recital Attendance	0
MUSX 283 Italian and German Diction for Singers	2
Oral Communication Course	3
Ensemble, Major Elective Course	1
Hours	17

Spring Term 2	Hours
MUSA 134 Studio Instruction	3
MUSA 246 Piano Class for Music Majors/Minors	1
MUSC 240 Aural Skills IV	2
MUSC 242 Theory Of Music IV	2
MUSH 322 Music in Society II	3
MUSX 140 Recital Attendance	0
MUSX 284 French and English Diction for Singers	2
Ensemble, Major Elective Course	1
Hours	14

Fall Term 3	Hours
MUSA 334 Studio Instruction	3
MUSA 387 Conducting I	2
MUSX 140 Recital Attendance	0
MUSA 208 Musical Conversation and Improvisation	1
MUSX 250 Introduction to Career Skills in Music	2
Scientific Ways of Knowing Course	4
UPDV Music History, Elective Course	3
Ensemble, Major Elective Course	1
Hours	16

Spring Term 3	Hours
MUSA 334 Studio Instruction	3
MUSA 490 Half Recital	0
MUST 435 Pedagogy & Materials	2
MUSX 140 Recital Attendance	0
Social and Behavioral Ways of Knowing Course	3
FREN 101 OR GERM 101	4
Ensemble, Major Elective Course	1
Hours	13

Fall Term 4	Hours
MUSA 334 Studio Instruction	3
MUSX 140 Recital Attendance	0
MUSH 452 Solo Vocal Repertoire	2
Scientific Ways of Knowing Course	4
UPDV Music History, Major Elective Course	3
FREN 102 OR GERM 102	4
Ensemble, Major Elective Course	1
Hours	17

Spring Term 4	Hours
MUSA 334 Studio Instruction	3
MUSA 491 Recital	0
MUSC 442 Musical Analysis	2
Social and Behavioral Ways of Knowing Course	3
American Diversity Course	3
FREN 201 OR GERM 201	4
Ensemble, Major Elective Course	1
Hours	16
Total Hours	122

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar’s Office regarding your official degree/certificate completion status.

1. Interpret and present musical ideas through performance.
2. Demonstrate expertise in major performing medium.
3. Communicate musical ideas verbally.
4. Self-assess performance skills accurately.
5. Demonstrate proficiency in reading music.

Musical Theatre Minor

Code	Title	Hours
MUSA 114	Studio Instruction (4 credits are required)	4
MUSA 145	Piano Class for Music Majors/Minors	1
MUSA 146	Piano Class for Music Majors/Minors	1
MUSA 180 or MUSA 380	Opera/Musical Theatre Studio	1-3
MUSC 139	Aural Skills I	2
MUSC 140	Aural Skills II	2
MUSC 141	Theory of Music I	2
MUSH 430	History of Musical Theatre	3
THE 105	Basics of Performance I	3

THE 106	Basics of Performance II	3
THE 305	Intermediate Acting I	3
Select two courses from the following:		2
DAN 105	Dance	
DAN 216	Technique	
DAN 416	Technique	
Total Hours		27-29

Courses to total 27 credits for this minor

Vocal-Instrumental Music Education Minor

Code	Title	Hours
MUSA 114	Studio Instruction (4 credits in Studio Instruction in Voice required)	4
MUSA 119/319	Marching Band	1
MUST 253	Brass Instrument Techniques	1
MUST 254	Percussion Techniques	1
MUST 255	Woodwind Techniques	1
MUST 386	Instrumental Music in the Secondary Schools	3
MUST 466	Marching Band Techniques	1
MUST 385	Choral Music in the Secondary School	3
Select two different semesters of Vocal Major Ensembles chosen from:		2
MUSA 116/316	Concert Choir--Vandaleers	
MUSA 117/317	University Choir	
Select one semester of Instrumental Major Ensemble chosen from:		1
MUSA 120/320	Wind Ensemble	
MUSA 121/321	Concert Band	
MUSA 122/322	Orchestra	
Total Hours		18

Courses to total 18 credits for this minor

Program in Aging Studies

Ben Barton, Coordinator (Student Health Center 211, 83844-3043; phone 208-885-6515)

The Aging Studies Minor connects different knowledge bases across many disciplines. The program offers an interdisciplinary approach that uses the concept of development in later life to examine cultural variables such as class, ethnicity, nationality, gender, and developmental processes and behavioral concerns such as relationship dynamics, health and lifestyle maintenance, work-retirement transitions, and changes in family structures. The courses encourage students to develop critical thinking skills that will empower them as active learners and lead them to a better understanding of what it means to grow old in a new age. Field and applied experiences enable students to demonstrate new knowledge and refine their competence in working with real life community and family problems. Fields such as communication, recreation, criminology, economics, health services, social work, law, psychology, education, and

family and consumer studies are increasingly offering special career opportunities to students with a background in aging studies.

Academic units that cooperate to offer this minor include the School of Family and Consumer Sciences (p. 137), the College of Art and Architecture (p. 158), and the Departments of Movement Sciences (p. 232), Psychology and Communication (p. 336), and Sociology and Anthropology (p. 311).

Minors

- Aging Studies Minor (p. 360)

Aging Studies Minor

Code	Title	Hours
Select courses in a minimum of two disciplines from the following:		
FCS 346	Personal and Family Finance and Management	18
FCS 428	Housing America's Families	
HDFS 434	Adulthood and Aging within the Context of Family	
H&S 150	Wellness Lifestyles	
IAD 443	Universal Design	
PSYC 419	Adult Development and Aging	
Up to 6 credits may come from the following:		
ARCH 498	Internship	
FCS 404	Special Topics	
FCS 498	Internship	
H&S 498	Internship	
PEP 498	Internship in Exercise Science & Health	
RSTM 430	Activity and Health in Movement and Leisure Sciences	
RSTM 498	Internship in Recreation, Sport, and Tourism	
SOC 498	Internship	
Total Hours		18

Other courses with at least 50% aging content as approved by a co-coordinator or an advisor may be selected.

Courses to total 18 credits for this minor

Program in American Indian Studies

Philip Stevens, Director (Phinney 115, 83844-1110; phone 208-885-8701; pstevens@uidaho.edu; www.uidaho.edu/class/interdisciplinary/aist (http://www.uidaho.edu/class/interdisciplinary/aist/)).

The University of Idaho's American Indian Studies program engages with Indigenous knowledge(s) and cultures(s) as dynamic, vibrant, diverse, place-based, and resilient. The AIS program seeks to educate, contemplate and study the deep continuities of Indigenous knowledge(s) rooted in place and sophisticated problem solving engaged across time and space, past and the present. By privileging the voices and experiences of Indigenous peoples themselves, AIS offers:

1. a place on the University of Idaho campus for critical Indigenous thought, pedagogies, and scholarship;
2. the dissemination of Indigenous knowledge to better inform global engagement conducted at the University of Idaho and the region; and

3. intellectual engagement on historical and contemporary legal, political, academic, scientific, and other issues across the Indigenous curriculum.

Central to the vision of the American Indian Studies program are programmatic and intellectual pursuits led by AIS value co-constructed, sustained and engaged relationships with Indigenous communities.

The American Indian Studies Program is based on the following objectives:

1. **Recruitment and retention** – enhance the recruitment and retention of Indian students, as well as other students of ethnic heritage, attending and graduating from UI.
2. **Intercultural communication** – provide an opportunity for face-to-face Indian/non-Indian exchange of ideas, perceptions, and misperceptions about Indian and Euro-American culture, including a meaningful context for intercultural communications and understanding, and solution of problems of bias and stereotyping.
3. **Cultural appreciation** – foster a better understanding of and appreciation for the vitality, breadth, depth, and rich diversity of components of contemporary Indian cultures (e.g., arts, economics, literature, government, and social and religious life), as well as their histories.
4. **Rigorous curriculum with an interdisciplinary approach** – enable students to acquire the knowledge, critical methods, and research skills of the academic fields that comprise the minor, including but not limited to anthropology, English, history, sociology, and teacher education.
5. **Application** – provide an Indian pedagogy and knowledge base, i.e., an Indian perspective, that would complement and be integrated with students' other academic fields of study (e.g., business, education, engineering, forestry and natural resources, health care, humanities, or social sciences), better preparing students with the skills and expertise to address and successfully meet the various issues and challenges faced in Indian communities.
6. **Collaboration** – build partnership relationships between UI and regional tribes (Idaho and adjacent western states), especially the Coeur d'Alene and Nez Perce Tribes, improving communications, educational delivery, the sharing of expertise, and ability to address common concerns and problems.
7. **Institutional growth** – advance the concerns and issues faced in Indian communities, as well as an Indian pedagogical and knowledge perspective within the university and academic communities.
8. **Inclusivity** – serve both Indian and non-Indian students and communities alike. Through the offered curriculum and sponsored activities, the overarching objective of the American Indians Studies Program is to provide a transformational educational experience for students.

Acknowledging the vital role native languages continue to play in American Indian communities and the need for their preservation, a curriculum in Nez Perce language is offered and upon completion of two years of study can be used to satisfy the Bachelor of Arts language requirement at the University of Idaho.

Students enrolled in the academic minor in American Indian Studies will be required to complete an academic service learning internship in collaboration with an area tribe. This internship helps fulfill the program's

vision and objectives of application and collaboration through the American Indian/Indigenous value of reciprocity.

Minors

- American Indian Studies Minor (p. 362)

AIST 101 Elementary Nez Perce I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing
Cross-listed with NEZP 101

Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.

AIST 102 Elementary Nez Perce II (4 credits)

Cross-listed with NEZP 102

Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar. Typically Offered: Varies.

Prereqs: AIST 101

AIST 110 Community Building (1 credit)

This course is aimed towards first generation college students from indigenous communities. This course helps students build community support through existing programs at the university and facilitates students' connections with their tribal cultures. It also helps students develop good study habits and build study skills.

AIST 111 Intro to Success (1 credit)

This course assists each student's academic, cultural, and social adjustment to the University. The course is also designed to provide supportive tools and resources to each student to ensure they are maximizing their ability. The course will focus on a few of the topic areas: time management, organization skills, tribal issues and tribal governmental structures, importance of diversity, learning styles, budgeting, and test taking.

AIST 204 (s) Special Topics (1-16 credits)

Credit arranged

AIST 210 Native Identities (3 credits)

This course is intended to develop a dynamic modern understanding of indigenous communities and self. The class will focus on such themes as family, history, blood & kinship, colonization, treaty rights and sovereignty, land and linguistics.

AIST 298 Tribal Natural Resource Internship (1-4 credits)

This course is a supervised internship in an Indian community setting that provides work experience and learning opportunities in natural resource ecology and management. The course requires the development of a formal plan of activities and learning goals that must be approved by the onsite supervisor and faculty instructor.

AIST 316 American Indian History (3 credits)

General Education: American Diversity

Cross-listed with HIST 316

Course investigates Indigenous people in North America from time immemorial to present. Emphasizes Native American resilience and adaptability in the face of colonialism.

AIST 320 Native American & Indigenous Film (3 credits)

General Education: American Diversity

Examines the representation of American Indians in film from early-mid 20th century Hollywood westerns to self representations of late 20th and early 21st century films made by Native Americans. Traces changes in the cinematic depictions of Native peoples and historical and cultural reasons for those changes. Emphasizes Native-made film as extension of oral tradition, indigenous aesthetics, and sovereignty. May include international Indigenous films.

AIST 329 Contemporary North American Indians (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

Cross-listed with ANTH 329

Histories, cultures, and practices of contemporary North American Indians.

AIST 400 (s) Seminar (1-16 credits)

Credit arranged

AIST 403 (s) Workshop (1-16 credits)

Credit arranged

AIST 404 (s) Special Topics (1-16 credits)

Credit arranged

AIST 411 Native American Architecture (3 credits)

General Education: American Diversity

An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

AIST 422 Contemporary Pacific Northwest Indians (3 credits)

General Education: American Diversity

This course is intended to impart an understanding of the vitality and rich diversity of contemporary Pacific Northwest American Indian societies, their histories, and their literatures, e. g. , in the arts and expressive culture, in governmental affairs both indigenous and external, in economics, ecological relations and natural resources, in health care, and in family, social and religious life, in oral traditions, in world views and cultural values. This understanding is inclusive of both indigenous cultural, as well as contact-historical, expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome.

ANTH 422 is cooperative: open to WSU degree-seeking students.

AIST 435 (s) Tribal Elders Series (3 credits, max 9)

Cross-listed with ANTH 321

Elders from neighboring tribes surrounding the University of Idaho will share a tribal epistemology that each tribe considers to be essential to an education of an adult. Such educational perspective may often be missing/misrepresented or misunderstood in current university pedagogy. This class will place an emphasis on contemporary indigenous voices. This course will have a subtopic heading to incorporate the possibility of having many neighboring tribes participate. Typically Offered: Fall.

AIST 445 Indigenous Ways of Knowing (3 credits)

Cross-listed with ANTH 545

The course is intended as an introduction to issues of cultural, racial, ethnic and linguistic diversity that arise in American school and society. In particular we will be looking at indigenous epistemological comparison with Western educational models. The central question for the course will be: Why is educational attainment different for different groups in society, and how does that difference relate to social stratification characteristics of the larger society? We will also try to answer other questions: What is the impact of cultural and linguistic diversity on the various institutions of society, including family, schools, and the economic system? What policies and programs have been developed in the US and other societies to deal with cultural diversities? These and other questions will be the basis for our reading and discussions Typically Offered: Fall.

AIST 453 Tribal Sovereignty and Federal Policy (3 credits)

Cross-listed with ANTH 314

This course provides an in-depth understanding of how colonial and Federal Indian Policies have impacted the lives of Tribes and their surrounding communities. Through a survey of the changing eras of policy (conquest, preRevolutionary approaches, the Marshall Trilogy, the Treaty Era, Allotment and Termination, and Self-Determination), students will learn about the forces that have shaped tribal communities, and a deeper appreciation for tribes' efforts to restore and exercise their sovereignty. Tribal Sovereignty as it applies to land management, natural resources and community development will be a focal area. Typically Offered: Spring.

AIST 484 Native American and Indigenous Literature (3 credits)

General Education: American Diversity

Cross-listed with ENGL 384

Significant texts, topics and traditions of American Indian, First Nations, and Indigenous writings in their literary and historical contexts, including the social and political circumstances out of which they arise. Emphasis on North America. Typically Offered: Varies.

Prereqs: ENGL 102

AIST 498 (s) Internship (1-16 credits)

Credit arranged Supervised internship in an Indian community setting, integrating academic study with work experience; requires formal plan of activities to be approved by the on site supervisor and assigned faculty member; a final written report will be evaluated by the assigned faculty member.

Prereqs: Permission

AIST 499 (s) Directed Study (1-16 credits)

Credit arranged

American Indian Studies Minor

Code	Title	Hours
AIST/ANTH 422	Contemporary Pacific Northwest Indians	3
AIST 445	Indigenous Ways of Knowing	3
AIST 453	Tribal Sovereignty and Federal Policy	3
Select 9 credits of elective courses from the following:		9
AIST/NEZP 101	Elementary Nez Perce I	
AIST 102	Elementary Nez Perce II	
AIST 110	Community Building	
AIST 111	Intro to Success	
AIST 204	Special Topics	
AIST 210	Native Identities	
AIST 298	Tribal Natural Resource Internship	
AIST 320	Native American & Indigenous Film	
AIST 400	Seminar	
AIST 403	Workshop	
AIST 404	Special Topics	
AIST 411	Native American Architecture	
AIST 435	Tribal Elders Series	
AIST 498	Internship	
AIST 499	Directed Study	
ANTH 329	Contemporary North American Indians	
ENGL 384	Native American and Indigenous Literature	

SOC 427	Racial and Ethnic Relations	
Total Hours		18

Courses to total 18 credits for this minor

Program in Interdisciplinary Studies

Undergraduate Program Coordinator - Traci Craig, Associate Dean (111 Admin. Bldg.; 208-885-5254); Graduate Program Coordinator - Jerry McMurtry, Dean (104 Morrill Hall; phone 208-885-2647)

Interdisciplinary Studies students create a curriculum that is not listed elsewhere in this catalog. The curriculum will be focused on meeting the student's particular educational and career goals and learning objectives by combining courses in two or more departments.

Majors

- Interdisciplinary Studies (B.A. or B.S.) (p. 363)

Certificates

- Corporate Social Responsibility Undergraduate Academic Certificate (p. 363)

Interdisciplinary Studies Graduate Program

- Interdisciplinary Studies (M.A. or M.S.) (p. 299) - Offered through the College of Graduate Studies

Corporate Social Responsibility Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a).

Code	Title	Hours
Work-Related Skills- Select 6 credits from the following: 6		
HDFS 445	Issues in Work and Family Life	
JAMM 341	Mass Media Ethics	
MHR 310	Leading Organizations and People	
MHR 441	Maintaining Employee and Labor Relations	
ORGS 441	Human Relations in the Workplace	
PHIL 103	Introduction to Ethics	
PHIL 208	Business Ethics	
SOC 423	Economic (In)Justice in the United States	
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	
Workplace Considerations - Select 1 course from the following: 1-3		
ACCT 201	Introduction to Financial Accounting	
ACCT 202	Introduction to Managerial Accounting	
BLAW 265	Legal Environment of Business	
CYB 110	Cybersecurity and Privacy	
ORGS 320	Budgeting for Small Organizations	
Health and Environment - Select 3 credits from the following: 3		
CORS 232	Science on Your Plate: Food Safety, Risks and Technology	
ENVS 101	Introduction to Environmental Science	

FS 110	Introduction to Food Science	
FS 436	Principles of Sustainability	
IAD 151	Introduction to Interior Architecture and Design	
ARCH 151	Introduction to the Built Environment	
NR 101	Exploring Natural Resources	
PSYC 319	Environmental Psychology	
RSTM 104	Recreation, Sport, and Tourism in Healthy Communities	
SOC 346	Responding to Risk	
Culture and Creativity - Select 6 credits from the following:		6
AIST 435	Tribal Elders Series	
AMST 301	Studies in American Culture	
ANTH 102	Cultural Anthropology	
ART 100	Introduction to Art: Why Art Matters	
CHIN 101	Elementary Chinese I	
COMM 335	Intercultural Communication	
DAN 100	Dance in Society	
FREN 101	Elementary French I	
GEOG 165	Human Geography	
GERM 101	Elementary German I	
JAPN 101	Elementary Japanese I	
MUSH 106	Women in American Popular Music	
MUSH 201	History of Rock and Roll	
SPAN 101	Elementary Spanish I	
THE 101	Introduction to the Theatre	
Required Capstone Course:		2
INTR 401	Career and Leadership Development	
Total Hours		18-20

Courses to total a minimum of 18 credits for this certificate

Students will be able to create and foster a workplace environment that promotes innovation and practices sustainability. Students will be able to communicate clearly with multiple stakeholders of an organization including customers, vendors, and employees. Students will be able to integrate their knowledge of culture and environment to implement practices that demonstrate socially responsible behavior. Students will be able to practice citizenship by gaining respect for diversity and understanding the necessity of sustaining local and global communities.

Interdisciplinary Studies (B.A. or B.S.)

The Interdisciplinary Studies program provides a unique opportunity for a student to create a curriculum that meets their desired goals. Students develop their own curriculum that combines at least two different fields of study into one program. The proposed curriculum has to be approved by a faculty in each of the chosen disciplines (at least one of which must be within CLASS) and ultimately must be approved by the CLASS dean's office. The curriculum will be focused on meeting the student's particular educational and career goals and learning objectives by combining courses in two or more departments.

The requirements of the Interdisciplinary Studies major are:

- A one-page proposal outlining the student’s career goals and explaining how the proposed curriculum will meet those desired career goals.
- The program must be approved by (a) at least one faculty member from each of the participating departments, one of which must be in CLASS, (b) the chair of one of the CLASS departments involved, and (c) the CLASS Dean’s Office.
- A minimum of 50 credits of courses numbered 200 or above, including a minimum of 36 credits in courses numbered 300 or above. It is recommended, however, that majors in interdisciplinary studies complete at least 50 credits in upper-division courses.
- University requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and CLASS requirements for either the B.A. or B.S. degree.

Interested students should consult the CLASS dean’s office in Moscow for further information about this program.

1. The student will be able to learn and integrate across disciplinary lines.
2. The student will be able to communicate an understanding of a complex idea in written or verbal form.
3. The student will be able to articulate their career goals and their plans to achieve them.

Program in Latin American Studies

Lori Celaya, Ashley Kerr, Co-Directors.

The program in Latin American studies is a multidisciplinary major leading to the B.A. degree. The appeal of this field of study has greatly increased over the last decade due to the region’s growing economic and political importance. A degree in the major is appropriate for employment in many fields, among which are the diplomatic service and overseas business as well as graduate study in various disciplines. Students electing the major will also broaden their awareness of non-Western cultures and history.

Majors

- Latin American Studies (B.A.) (p. 364)

Latin American Studies (B.A.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general requirements for the B.A. degree, including Spanish for the foreign language requirement, and:

Code	Title	Hours
LAS 306	Culture and Institutions of Latin America	3
FLEN 391 or FLEN 394	Hispanic Film Latin American Literature in Translation	3
HIST 438 or HIST 439	Modern Mexico and the Americas Modern Latin America	3
Select 27 credits of the following courses: ¹		27
ANTH 102	Cultural Anthropology	
ANTH 462	Human Issues in International Development	
ECON 447	International Development Economics ²	
HIST 315	Comparative African-American Cultures	

HIST 440	Social Revolution in Latin America
HIST 441	Slavery and Freedom in the Americas
IS 320	Model United Nations
IS 321	UN and Related Agencies
POLS 449	World Politics and War
POLS 480	Politics of Development
SPAN 402	Readings: Spanish American Literature
SPAN 404	Special Topics
SPAN 409	Modern Latin American Society
SPAN 413	Spanish American Short Fiction
SPAN 419	Latin America Theatre Through Literature
SPAN 421	Bilingual and Bicultural Identities
SPAN 422	Mexican Culture through Cinema
SPAN 424	Human Rights and Hispanic Cinema

Additionally, all students must take Avant’s STAMP (STANDards-based Measurement of Proficiency) exit exam before applying for graduation.

Total Hours **36**

Courses to total 120 credits for this degree

1

Students may also take the optional courses listed above, at least six of which must be Spanish credits.

2

Students who elect to take ECON 447 International Development Economics are strongly urged to take HIST 101 World History I/HIST 102 World History II (History of Civilization) in their freshman year.

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
SPAN 101	Elementary Spanish I	4
Oral Communication Course		3
Mathematical Ways of Knowing Course		3
Elective Course		3
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
SPAN 102	Elementary Spanish II	4
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Elective Course		2
Hours		15
Fall Term 2		Hours
SPAN 201	Intermediate Spanish I	4
Scientific Ways of Knowing Course		4
Approved LAS elective, Major Elective Course		3
B.A. Course Requirement		3
Hours		14
Spring Term 2		Hours
SPAN 202	Intermediate Spanish II	4
Scientific Ways of Knowing Course		4
American Diversity Course		3
Approved LAS elective, Major Elective Course		3
1 credit Elective Course		1
Hours		15
Fall Term 3		Hours
Approved LAS elective, Major Elective Course		3
Elective Course		3

Elective Course	3
Elective Course	3
FLEN 391 OR FLEN 394	3
Hours	15
Spring Term 3	
Approved LAS elective, Major Elective Course	3
Approved LAS elective, Major Elective Course	3
Elective Course	3
B.A. Course Requirement	3
B.A. Course Requirement	3
Hours	15
Fall Term 4	
LAS 306 Culture and Institutions of Latin America	3
Approved LAS elective, Major Elective Course	3
Approved LAS elective, Major Elective Course	3
Elective Course	3
HIST 438 OR HIST 439	3
Hours	15
Spring Term 4	
Approved LAS elective, Major Elective Course	3
Approved LAS elective, Major Elective Course	3
Senior Experience Course	3
Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. **Communicative Proficiency:** Students will demonstrate foreign language proficiency in writing, speaking, listening, and reading. Aligns with University Learning Outcome(s): Learn and Integrate; Think and Create; Communicate.
2. **Cultural Understanding and Acquisition of Knowledge:** Students will explain the inter-connectedness between language, culture, history, and peoples in Latin America. Aligns with University Learning Outcome(s): Learn and Integrate; Think and Create; Communicate; Clarify Purpose and Perspective.
3. **Analytical Ability:** Students will compare different Latin American cultures and evaluate the ways these cultures are similar or different from their own. Aligns with University Learning Outcome(s): Learn and Integrate; Think and Create; Communicate; Clarify Purpose and Perspective; Practice Citizenship.

Program in Organizational Sciences

Richard Reardon, Program Coordinator; Ben Barton, Chair (211 Student Health Ctr. 83844-3043; phone 208-885-6324; www.uidaho.edu/class/psychcomm (http://www.uidaho.edu/class/psychcomm/))

The purpose of this program is to provide leadership training for students interested in a variety of purpose-driven organizations.

Organizational settings, including for-profit businesses, political organizations (e.g., legislative bodies, political parties, PACs), not-for-profit organizations (e.g., health care companies, charities, volunteer

agencies), and public and private boards (e.g., boards of education, homeowners associations, church boards), are dynamic entities that rely on skilled leaders to function efficiently and to ensure positive workplace culture and climate. The interdisciplinary program in Organizational Sciences draws from business, industrial/organizational psychology, public administration, industrial sociology, educational leadership and other disciplines to provide students with an understanding of interpersonal workplace dynamics and fundamentals of leadership.

It has become increasingly evident over the last century that many problems in the workplace are the result of relationship failures. Examples of such failures include conflict between managers and employees, conflict between employees and other employees, conflict between groups within organizations, poor communication between organizations and the communities they serve, lack of proper coordination of efforts, lack of proper understanding of worker capabilities and training needs, lack of concern for both employee and manager professional development, and the inability of both managers and employees to understand that organizational success depends on leaders and workers keeping the natural tension between them from becoming destructive.

Majors

- Organizational Sciences (B.S.) (p. 366)

Certificates

- Organizational Dynamics Undergraduate Academic Certificate (p. 365)

Organizational Dynamics Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (0-10-a (p. 94)).

Code	Title	Hours
ORGS 305	Nonprofit Organizations	3
ORGS 407	Advanced Nonprofit Organizations	3
ORGS/PSYC 441	Human Relations in the Workplace	3
Select 3 credits from the following:		3
ORGS 320	Budgeting for Small Organizations	
ORGS 330	Workplace Motivation and Soft Skills	
Select 3 credits from the following: ¹		3
COMM 335	Intercultural Communication	
COMM 410	Conflict Management	
COMM 456	Nonprofit Fundraising	
ORGS/PSYC 414	Traumatic Events: Preparation, Intervention, Evaluation	
Total Hours		15

¹

Three credits of COMM, ORGS, ORGS 400, POLS, PSYC 400, PSYC 404, PSYC 494, PSYC 498, or PSYC 499 may be substituted for one of the above courses with the approval of the Director of Organizational Sciences

Courses to total 15 credits for this certificate

Organizational Sciences (B.S.)

Note: If an Organizational Sciences student chooses to add Communication as a second major, a maximum of 9 credits of COMM courses can be counted toward both majors. It is recommended that Organizational Sciences majors discuss adding an academic minor, emphasis, or second major with their advisors.

Required coursework includes the university requirements (see regulation J-3 (p. 78)), the general requirements for the B.S. degree, and:

Code	Title	Hours
ORGS 210	Introduction to Organizational Sciences	1
ORGS 320	Budgeting for Small Organizations	1-3
or ACCT 201	Introduction to Financial Accounting	
ORGS 330	Workplace Motivation and Soft Skills	3
or MHR 310	Leading Organizations and People	
ORGS 410	Capstone Project in Organizational Sciences	1-6
Select one of the following:		3-4
ORGS 444	Methods and Analysis in Organizational Science	
COMM 359	Communication Research Methods	
or PSYC 218	Introduction to Research in the Behavioral Sciences	
Select nine courses from the following:		27
COMM 335	Intercultural Communication	
COMM 347	Persuasion	
COMM 355	Organizational Communication	
COMM 410	Conflict Management	
COMM 438	Crisis Communication	
COMM 456	Nonprofit Fundraising	
ENTR 414	Entrepreneurship	
ORGS 255	Financial Literacy	
ORGS 305	Nonprofit Organizations	
ORGS 400	Seminar ¹	
ORGS 404	Special Topics ¹	
ORGS 407	Advanced Nonprofit Organizations	
ORGS 414	Traumatic Events: Preparation, Intervention, Evaluation	
ORGS 415	Planning Professional Conferences and Events	
ORGS 435	Personnel	
ORGS 441	Human Relations in the Workplace	
ORGS 450	Organizational Systems and Projects	
ORGS 494	Research Experience in Organizational Sciences ²	
ORGS 498	Internship ²	
ORGS 499	Directed Study ²	
POLS 451	Public Administration	
PSYC 320	Introduction to Social Psychology	
PSYC 345	Group Dynamics	

Total Hours **36-44**

1

A maximum of 3 credits each of ORGS 400 and ORGS 404 may be used towards the completion of this major.

2

A maximum of 3 credits total from ORGS 494, 498, and 499 may be used toward completion of this major.

Courses to total 120 credits for this degree

	Hours	
Fall Term 1		
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
STAT 153	Introduction to Statistical Reasoning	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
ORGS 210	Introduction to Organizational Sciences	1
PSYC 101	Introduction to Psychology	3
Scientific Ways of Knowing Course		4
Elective Course		3
Hours		14
Fall Term 2		
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
B.S. Course Requirement		3
Elective Course		3
Elective Course		2
Hours		15
Spring Term 2		
International Course		3
Social and Behavioral Ways of Knowing Course		3
Specialization, Major Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Fall Term 3		
ORGS 320	Budgeting for Small Organizations	1
or ACCT 201	or Introduction to Financial Accounting	
ORGS 330	Workplace Motivation and Soft Skills	3
or MHR 310	or Leading Organizations and People	
Social and Behavioral Ways of Knowing Course		3
Specialization, Major Elective Course		3
Specialization, Major Elective Course		3
B.S. Course Requirement		3
Hours		16
Spring Term 3		
Specialization, Major Elective Course		3
Specialization, Major Elective Course		3
B.S. Course Requirement		3
B.S. Course Requirement		3
Elective Course		3
Hours		15
Fall Term 4		
ORGS 444	Methods and Analysis in Organizational Science	4
Specialization, Major Elective Course		3
Specialization, Major Elective Course		3
American Diversity Course		3
Elective Course		3
Hours		16
Spring Term 4		
ORGS 410	Capstone Project in Organizational Sciences	2
Specialization, Major Elective Course		3
Specialization, Major Elective Course		3

Elective Course	3
Elective Course	3
Hours	14
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students should understand the fundamentals of leadership, i.e., personality characteristics that make great leaders, trainable skills that potential leaders can master, and situational factors that contribute to leadership success and failure.
2. Students should understand interpersonal workplace dynamics, including workplace conflict, workplace aggression, and factors that affect workplace cooperation and competitiveness. They should understand the causes and remedies of workplace discrimination and harassment. They should understand the forces that affect employee job satisfaction, retention, and placement.
3. Students should understand the importance of employee selection, placement, and training.
4. Students should understand the unique aspects of employment in both the private and public sectors in terms of the relative emphasis on entrepreneurial activities and public service. Relevant issues include budgeting, public/private decision-making, managerial norms, ethical behavior, and public relations.
5. As many of the students are expected to be in the workforce, there will be opportunity to present and evaluate "real world" examples and case studies.

Program in Women's, Gender, and Sexuality Studies

Katie Blevins (katieblevins@uidaho.edu) and **Alexandra Teague** (ateague@uidaho.edu), Program Co-Directors

Women's, Gender, and Sexuality Studies is an interdisciplinary academic field devoted to the study of topics concerning gender and sexuality, feminist theory and research, social history, public health, and participation in the arts and popular culture. The Women's, Gender, and Sexuality Studies minor offers an interdisciplinary program that allows students to develop critical thinking skills in relation to the scholarly pursuit of knowledge about the history of feminism, and the social construction of cultural variables, such as gender, sexual identity, age, and race and ethnicity. Women's, Gender, and Sexuality Studies attract students of all sexes because it endeavors to expose unexamined attitudes about cultural factors including gender, race and ethnicity, class, age, diverse abilities, sexual identity, and beyond. The Women's, Gender, and Sexuality Studies minor is an asset in the job market for everyone in both the public and private sectors.

Minors

- Women's, Gender, and Sexuality Studies Minor (p. 367)

Women's, Gender, and Sexuality Studies Minor

Code	Title	Hours
Select one of the following courses:		3
WGSS 201	Introduction to Women's, Gender, and Sexuality Studies	
HIST 212	Sex and Gender through the Ages	
SOC 201	Introduction to Inequity and Justice	
Select a minimum of three different subject prefixes from the following:		15
ANTH 428	Social and Political Organization	
ANTH 462	Human Issues in International Development	
ANTH 463	Contemporary Issues Affecting Men & Masculinities	
COMM 432	Gender and Communication	
CRIM 421	Gender and Crime	
CRIM 439	Inequalities in the Justice System	
EDCI 420	Gender and Sexual Diversity in Schools	
ENGL 281	Introduction to Women's Literature	
ENGL 382	Queer Literature	
ENGL 481	Women's Literature (May be retaken once to total 6 credits.)	
HDFS 105	Individual and Family Development	
HDFS 240	Intimate Relationships	
ECDE 340	Parent-Child Relationships in Family and Community	
ECDE 436	Theories of Child and Family Development	
HDFS 440	Contemporary Family Relationships	
HDFS 445	Issues in Work and Family Life	
FN 451	Eating Disorders	
HIST 212	Sex and Gender through the Ages	
HIST 357	Women in Pre-Modern European History	
HIST 420	History of Women in American Society	
HIST 464	Gender and Race in the American West	
JAMM 340	Media and Diversity	
JAMM 441	(s)Adv Concepts Media/Diversity	
JAMM 446	Women in the Media	
MUSH 106	Women in American Popular Music	
PHIL 205	Topics in Social Philosophy	
PHIL 408	Feminism and Philosophy	
PSYC 315	Psychology of Women	
PSYC 320	Introduction to Social Psychology	
PSYC 330	Human Sexuality	
SOC 201	Introduction to Inequity and Justice	
SOC 327	Sociology of the Family	
SOC 424	Sociology of Gender	
SOC 427	Racial and Ethnic Relations	
SOC 465	Environmental Justice	
WGSS 367	Topics in Women's, Gender, and Sexuality Studies	
WGSS 404	Special Topics	
WGSS 410	Feminist Theory and Action	
WGSS 495	Women's Center Internship	

WGSS 498	Internship in Women's, Gender, and Sexuality Studies	
WGSS 499	Directed Study	
Total Hours		18

Note: WGSS 367 and ENGL 481 may be repeated if the topic is different. WGSS 495, WGSS 498, and WGSS 499 may be repeated for up to 6 credits each.

With prior approval of the Women's, Gender, and Sexuality Studies committee, a student may also include credit from survey courses, special topics courses, or seminars meeting the guidelines for inclusion of courses in a Women's, Gender, and Sexuality Studies minor. No more than 3 credits may count toward both the student's major and minor.

Courses to total 18 credits for this minor

Religious Studies

Ellen Kittell, History Department (311D Administration Building 83844-3175; phone 208-885-6218).

The academic study of religion has deep roots in Western intellectual history. One cannot adequately grasp the full dynamics of world culture without attending to the role of religion. In the last hundred years, scholars in the West have paid increasing attention to non-Western religions and to the category of "religion" itself as a dimension of human experience.

Religious studies courses do not encourage or discourage religious belief; rather, they engage in the academic study of religion as a crucial element of human culture. Religious studies employs a variety of methods including anthropological, sociological, historical, philosophical, phenomenological, literary, and linguistic approaches. The principal goal of religious studies is submitting sacred texts and traditions to descriptive, analytical, critical, and empathetic scrutiny.

In terms of employment potential, a religious studies minor primarily serves a student in the same way that history or philosophy might. It increases a student's understanding of persons and cultures. Key liberal arts skills in close reading, analysis, research, and oral and written communication are central to religious studies. Some students will use religious studies to enhance their chances of acceptance in graduate programs in areas such as anthropology, sociology, social work, international relations, history, or various area studies. Others may use the minor as a broadly based stepping stone for professional training in theological seminaries or rabbinical schools.

Minors

- Religious Studies Minor (p. 368)

Religious Studies Minor

Code	Title	Hours
Religious Traditions		
Select 9 credits from the following Religious Traditions areas with at least 3 credits in Asian, Pacific, and Indigenous Religious Traditions and at least 3 credits in Western Religious Traditions		9
Asian, Pacific, and Indigenous Religious Traditions:		
ANTH 329	Contemporary North American Indians	
ANTH 422	Contemporary Pacific Northwest Indians	

HIST 180	Introduction to East Asian History	
HIST 485	Chinese Social and Cultural History	
PHIL 307	Buddhism	
RELS 204	Special Topics (Related to this category)	
	or RELS 404 Special Topics	
Western Religious Traditions:		
HIST/RELS 341		
HIST/RELS 344	The Roman Empire	
HIST 442	The Medieval Church: Europe in the Early and High Middle Ages	
HIST 443	The Medieval State: Europe in the High and Late Middle Ages	
HIST 447	The Renaissance	
HIST 448	The Reformation	
PHIL 302	Biblical Judaism: Texts and Thought	
PHIL 303	Early Christianity: Texts and Thought	
RELS 204	Special Topics (Related to this category)	
	or RELS 404 Special Topics	
Approaches to Religious Studies and Religion and Culture		
Select 9 credits with at least 3 credits in Religion and Culture:		9
Approaches to Religious Studies:		
ANTH 327	Belief Systems	
RELS 204	Special Topics (Related to this category)	
	or RELS 404 Special Topics	
Religion and Culture:		
SOC 211	Development of Social Theory	
ART 100	Introduction to Art: Why Art Matters	
FLEN 210	Introduction to Classic Mythology	
HIST 101 & HIST 102	World History I and World History II	
HIST 270	Introduction to Greek and Roman Civilization	
HIST 457	History of the Middle East	
PHIL 240	Belief and Reality	
PHIL 320	History of Ancient and Medieval Philosophy	
PHIL 321	History of Modern Philosophy	
RELS 204	Special Topics (Related to this category)	
	or RELS 404 Special Topics	

Total Hours **18**

Courses to total 18 credits for this minor

Foreign languages appropriate to the minor are strongly recommended. For example, Chinese, Japanese, or Nez Perce are recommended for concentration in Asian, Pacific, and Indigenous traditions; Arabic, or Latin for those focusing on Western traditions.

School of Global Studies

Rachel Halverson (German), Director (332 Admin. Bldg. 83844-3174; 208-885-6179; SGS@uidaho.edu (sgs@uidaho.edu)).

The School of Global Studies provides students with several interrelated disciplines in which they can pursue B.A./B.S. degrees or minors. These programs are situated in two primary domains: one focused

on international studies and one focused on language and culture. The School of Global Studies offers programs in French, International Studies, Latin American Studies, Modern Language Business Option, and Spanish, with minors available in Asian Studies, French, German, International Studies, and Spanish. The American Language and Culture Program (ALCP), an intensive English-language program, is also housed in the School.

International Studies

The Program in International Studies offers a unique, interdisciplinary approach to studying global issues. Students take a core of common courses in a Global Theme during the freshman and sophomore years, and then select an issue emphasis and a regional emphasis that shape the courses taken during the junior and senior years. The regional emphasis is supplemented by language study and an international experience of at least ten weeks' duration. Such international experience can take the form of studying abroad, completing an internship abroad, or participating in service learning or other volunteer experience abroad.

Program staff and faculty emphasize experiential learning, undergraduate research opportunities, and excellence in teaching for all students in the program.

Languages and Cultures

Students who take modern language literature and culture courses to complete a major or minor will:

- Gain a deeper understanding of a variety of cultures, including their own;
- Become highly competitive in the international and domestic workforce;
- Increase their critical thinking and communication skills;
- Understand and make connections within the interdependent world; and
- Become engaged world citizens.

As a leading center for the study of languages and cultures in Idaho, the School of Global Studies helps students gain a deeper understanding of a variety of cultures, including their own, and become engaged world citizens. Faculty members, who are from the U.S, China, France, Germany, Japan, Mexico, and Spain, prepare their students for professions in which proficiency in a second or third language is useful or required, including business, education, government, healthcare, law, and media. This is reflected in the growing number of double/triple majors and academic minors who choose to combine the formal study of a language with another field related to the student's other career or professional interests, enabling them to become highly competitive in the international and domestic workforce.

In addition to coursework at the University of Idaho, language majors are required to fulfill an international experience requirement (eight week minimum) by completing an approved study abroad program or international internship or faculty-led experience or a combination of all. This experience should take place after the student has finished language study through the intermediate (200) level. The study abroad program, internship, or faculty-led experience must receive prior approval from the student's advisor. Shorter international experiences exceptions can be considered in case of extraordinary financial or family circumstances.

If a student has already studied a language in high school, they may be eligible to receive vertically-related course credits simply by completing a more advanced course at UI.

Majors

- International Studies (B.A.) (p. 371)
- French (B.A.) (p. 370)
- Latin-American Studies (B.A.) (p. 364) - Offered through the Latin American Studies program
- Modern Language Business (B.A.) (p. 373)
- Spanish (B.A.) (p. 374)

Minors

- International Studies Minor (p. 372)
- Asian Studies Minor (p. 370)
- French Minor (p. 371)
- German Minor (p. 371)
- Spanish Minor (p. 375)

Modern Languages and Cultures Undergraduate Curricular Requirements

A maximum of 15 transfer credits and/or credits earned through study abroad may be applied toward the upper-division requirements for the B.A. degree in Foreign Language, French, and Spanish.

Students who receive a 'C' or 'D' in their first upper-division language class are required to pass an oral and written proficiency exam to meet minimum departmental proficiency standards before being allowed to register in other upper-division language classes.

A student must receive a 'C' or better in an upper-division course in the appropriate target language to count towards the major.

Before going on a study abroad program, students must have the approval of their major advisor to ensure that their proposed program meets with departmental approval. Upon returning to UI, the Department of Modern Languages & Cultures will evaluate the students' oral and written proficiency and determine which classes studied abroad may count towards the major. Study abroad credits with the number 404 and University of Idaho credits with the number 449, 498, or 499 will not automatically count toward the Foreign Languages, French, or Spanish majors; they will be evaluated by a Modern Languages and Cultures advisor and may be used to complete the major only upon approval.

Modern Languages and Cultures Academic Minor Requirements

Students must complete 20 credits for the Asian Studies, French, German, or Spanish minor, of which at least 9 must be upper-division, and take Avant's STAMP (STAndards-based Measurement of Proficiency) exit exam¹.

At least 9 of the 20 credits must be UI courses taken in residence. Credits earned through study abroad may be applied toward completion of the minor requirements.

Vertical credits may be acquired per Regulation I for the 101, 102, 201, and 202 courses as part of the 20 credits, but vertical credits may not be acquired per Regulation I for 300/400-level courses. It is not possible to challenge any upper-division courses for the minor.

Transfer credits may be applied toward a minor with the approval of the department offering the minor; however, the last nine credits applied to completion of the minor must be earned in the following ways:

1. UI courses,
2. through UI study abroad, or
3. through student exchange programs, and may not include credits earned through correspondence study.

A student must receive a 'C' or better in any course to count for the Asian Studies, French, German, or Spanish minor.

Asian Studies Minor

Code	Title	Hours
Select 12 credits of one Asian language or one semester of Approved Study Abroad in Asia 12		
Select 9 credits from the following: ¹ 9		
CHIN 202	Intermediate Chinese II	
CHIN 310	Advanced Chinese 1: Oral Communication	
CHIN 312	Advanced Chinese 2: Reading & Translation	
CHIN 314	Advanced Chinese 3: Writing & Grammar	
FLEN 325	Contemporary Chinese Culture and Customs	
FLEN 326	Chinese Cinema in Translation	
FLEN 327	Chinese Literature in Translation	
FLEN 331	Japanese Anime	
HIST 180	Introduction to East Asian History	
HIST 482	Japan, 1600 to Present	
HIST 484	Modern China, 1840s to Present	
HIST 485	Chinese Social and Cultural History	
IS 325	The Contemporary Muslim World	
JAPN 202	Intermediate Japanese II	
JAPN 301	Japanese Reading and Writing	
JAPN 303	Japanese Listening and Speaking	
PHIL 307	Buddhism	
POLS 420	Introduction to Asian Politics	

Total Hours 21

1

Courses from the following list may be selected. No more than 6 credits in the student's major. At least 9 of the 21 credits must be UI courses taken in residence. Credits earned through study abroad may be applied toward completion of the minor requirements.

Courses to total 21 credits for this minor

French (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

Code	Title	Hours
FL 401	SGS Capstone Experience	1
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
30 Credits of upper-division French coursework ^{1,2,3}		30
A second foreign language (elementary and intermediate or equivalent) or a minor in International Studies ⁴		16-18
STAMP Exit Exam		
One of the following:		
International Experience (Minimum of 8 weeks) ⁵		
FLEN 401	Topics in Global Studies (New Course - Topics in Global Studies)	

1

The 30 credits of upper-division French coursework must include a minimum of 9 credits at the 400-level.

2

The 30 credits of upper-division French coursework may include no more than 6 credits of FLEN coursework. The remaining credits must be in FREN coursework.

3

The 30 credits of upper-division French coursework must include a minimum of 9 credits completed on campus.

4

This requirement is waived for students with a double major (French plus another major)

5

Studying abroad is highly recommended and the international experience option may be fulfilled by completing an approved study abroad program or international internship or faculty-led experience or a combination of all. This experience (completed in French) should take place after the student has finished language study through the intermediate (200) level. The study abroad program or the internship must receive prior approval from the student's major advisor.

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
FREN 101	Elementary French I	4
Oral Communication Course		3
Mathematical Ways of Knowing Course		3
Elective Course		3

Hours 16

Spring Term 1

ENGL 102	Writing and Rhetoric II	3
FREN 102	Elementary French II	4
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		2

Hours 15

Fall Term 2

FREN 201	Intermediate French I	4
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
CHIN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4

Hours 15

Spring Term 2

FREN 202	Intermediate French II	4
Elective Course		3

Scientific Ways of Knowing Course	4
CHIN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102	4
Hours	15
Fall Term 3	
B.A. Course Requirement	3
B.A. Course Requirement	3
UPDV FREN or FLEN, Major Elective Course	3
UPDV FREN or FLEN, Major Elective Course	3
CHIN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4
Hours	16
Spring Term 3	
FL 401 SGS Capstone Experience	1
UPDV FREN or FLEN, Major Elective Course	3
UPDV FREN, Major Elective Course	3
UPDV FREN, Major Elective Course	3
CHIN 202 OR GERM 202 OR JAPN 202 OR SPAN 202	4
Hours	14
Fall Term 4	
UPDV FREN , Major Elective Course	3
UPDV FREN, Major Elective Course	3
B.A. Course Requirement	3
American Diversity Course	3
400-level French, Major Elective Course	3
Hours	15
Spring Term 4	
400-level French, Major Elective Course	3
400-level French, Major Elective Course	3
UPDV FREN or FLEN, Major Elective Course	3
Elective Course	3
Elective Course	2
Hours	14
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. **Communicative Proficiency:** Students will demonstrate foreign language proficiency in writing, speaking, listening, and reading.
2. **Analytical Ability:** Students will evaluate the ways an international experience impacted their problem solving skills, language ability, and social skills.
3. **Cultural Understanding:** Students will demonstrate an increased understanding of the interconnectedness between language, culture, and its people.
4. **Acquisition of knowledge:** Students will compare the linguistic, political, artistic, and/or social customs of another culture to their experiences in the United States.
5. **Citizenship:** Students will analyze the ways in which an international experience impacted them as global citizens.

French Minor

For specific guidelines see Modern Languages and Cultures Academic Minor Requirements (p. 369).

Code	Title	Hours
FREN 101	Elementary French I	4
FREN 102	Elementary French II	4
FREN 201	Intermediate French I	4
FREN 202	Intermediate French II	4
Select 9 credits which may not include lab-based or FLEN courses		9
Total Hours		25

Courses to total a minimum of 20 credits for this minor

German Minor

Code	Title	Hours
GERM 101	Elementary German I	4
GERM 102	Elementary German II	4
GERM 201	Intermediate German I	4
GERM 202	Intermediate German II	4
Select 9 credits of upper-division German courses which may not include lab-based or FLEN courses ¹		9
Total Hours		25

1

Students must complete 6 of these 9 credits of upper-division coursework at the University of Idaho to complete the German minor.

Courses to total 25 credits for this minor

International Studies (B.A.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general requirements for the B.A. degree, and:

Code	Title	Hours
IS 310	The United Nations	3
IS 410	NGOs in the International System	3
IS 495	International Studies Senior Seminar	3
Select one of the following:		4-6
ECON 201 & ECON 202	Principles of Macroeconomics and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select one of the following:		3
GEOG 260	Introduction to Geopolitics	
POLS 205	Introduction to Comparative Politics	
POLS 237	Introduction to International Politics	
Select 3 credits from the following:		3
ANTH 102	Cultural Anthropology	
ENGL 385	World Literature	
ENVS 225	International Environmental Issues Seminar	
GEOG 200	World Cultures and Globalization	
JAMM 490	Issues in Global Media	
SOC 350	Food, Culture, and Society	
Select at least 12 credits of advisor-approved Issues Emphasis Electives or any major or minor EXCEPT American Studies, American Indian Studies, Africana Studies, Asian Studies, English, French, German, Latin American Studies, or Spanish.		12

Select at least 12 credits of advisor-approved Regional Emphasis Electives or one of the following majors or minors: African Studies, Asian Studies, French, German, Latin American Studies, or Spanish.

An International Experience in the region of emphasis
 Select 15 additional credits of IS courses not taken for other parts of the degree program, with no more than 3 credits in IS 498 Internship

Total Hours 58-60

International Experience

An international experience in the student’s region of emphasis is required for all students in this major. The experience must extend consecutively for at least 8 weeks and include an academic project or assignment and immersion in the culture of the country. All costs associated with the international experience are the responsibility of the student.

The requirement of international experience will normally be fulfilled by completing a registered credit program such as study abroad, student exchange, student teaching, internship, or a Faculty-Staff Led International Trip for 8 weeks minimum. In general, credits are registered on the UI campus; course work and field experience are taken abroad.

In some cases, permission may be granted to complete noncredit work experience that places the student abroad for a contracted length of time. Normally this work assignment will be completed during the degree program. In some instances, prior work experience may be accepted based on the following criteria: verification, length, nature, recentness, and relevancy of experience.

Courses to total 120 credits for this degree

	Hours
Fall Term 1	
ENGL 101 Writing and Rhetoric I	3
Oral Communication Course	3
Elective Course	3
Mathematical Ways of Knowing Course	3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101	4
Hours	16
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
Scientific Ways of Knowing Course	4
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102	4
Hours	14
Fall Term 2	
IS 310 The United Nations	3
B.A. Course Requirement	3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4
GEOG 260 OR POLS 205 OR POLS 237	3
ECON 201 OR ECON 272	3
Hours	16
Spring Term 2	
Scientific Ways of Knowing Course	4
International Studies Course, Major Elective Course	3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR NEZP 202 OR SPAN 202	4
ANTH 102 OR ENGL 385 OR ENVS 225 OR GEOG 200 OR IS 195 OR JAMM 490 OR SOC 350	3
ECON 202 OR ECON 272	3
Hours	17
Fall Term 3	
Foreign Language, Major Elective Course	3

Issue Emphasis, Major Elective Course	3
Regional Emphasis, Major Elective Course	3
American Diversity Course	3
International Studies Course, Major Elective Course	3
Hours	15
Spring Term 3	
Foreign Language, Major Elective Course	3
Issue Emphasis, Major Elective Course	3
Regional Emphasis, Major Elective Course	3
B.A. Course Requirement	3
B.A. Course Requirement	3
Hours	15
Fall Term 4	
IS 410 NGOs in the International System	3
Regional Emphasis, Major Elective Course	3
Issue Emphasis, Major Elective Course	3
International Studies Course, Major Elective Course	3
International Studies Course, Major Elective Course	3
Hours	15
Spring Term 4	
IS 495 International Studies Senior Seminar	3
Regional Emphasis, Major Elective Course	3
Issue Emphasis, Major Elective Course	3
International Studies Course, Major Elective Course	3
Hours	12
Total Hours	120

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1. Students will demonstrate an understanding of how countries act and interact with each other in the international system through application of their individual domestic programs/foreign policies in intergovernmental organizations.
2. Students will demonstrate an understanding of major patterns in culture, geography, economics, and politics in their target region.
3. Students will demonstrate an understanding of the role and importance of Non-Governmental Organizations (NGOs) in global governance and the major patterns of cooperation with states, intergovernmental organizations, businesses, and other civil society organizations.
4. Students will demonstrate an understanding of major patterns in the way developed and developing nations, intergovernmental organizations, nongovernmental organizations, and/or business interests relate to their target issue emphasis.
5. Students will demonstrate evidence of critical thinking skills.

International Studies Minor

Code	Title	Hours
Select 2-3 Global Theme courses from the following:		
ANTH 102	Cultural Anthropology	6-9
ENGL 385	World Literature	
ENVS 225	International Environmental Issues Seminar	
GEOG 200	World Cultures and Globalization	

GEOG 260	Introduction to Geopolitics
JAMM 490	Issues in Global Media
POLS 205	Introduction to Comparative Politics
POLS 237	Introduction to International Politics
SOC 350	Food, Culture, and Society
Select 9-12 credits of IS courses, at least 9 credits upper division 9-12	
Total Hours	15-21

Courses to total 18 credits for this minor.

Modern Language Business (B.A.)

Designed to provide the student of modern languages with a liberal arts education and a core of business courses that will open doors to a career in international business.

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
FL 401	SGS Capstone Experience	1
FLEN 307	Institutions of the European Union	3
Select one of the following:		3-4
ECON 201	Principles of Macroeconomics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select three or more courses from the following:		9
ENTR 414	Entrepreneurship	
FIN 301	Financial Resources Management	
MHR 311	Introduction to Management	
MKTG 321	Marketing	
MIS 350	Managing Information	
OM 370	Introduction to Operations and Supply Chain Management	
OM 378	Project Management	
Select 6 credits of Upper-Division Business electives (Business 190 also applies to this requirement):		6
Select one modern language; elementary and intermediate:		16
Chinese		
French		
German		
Japanese		
Spanish		
Select 21 credits of approved upper-division courses in the same language (including one business course or approved alternative in the target language)		21
Additionally, all students must take Avant's STAMP (STAndards-based Measurement of Proficiency) exit exam before applying for graduation.		
One of the following:		
International Experience (Minimum of 8 weeks) ¹		
FLEN 401	Topics in Global Studies	
Total Hours		62-63

1

Studying abroad is highly recommended and the international experience option may be fulfilled by completing an approved study abroad program or international internship or faculty-led experience or a combination of all. This experience should take place after the student has finished language study through the intermediate (200) level. The study abroad program or the internship must receive prior approval from the student's major advisor.

Courses to total 120 credits for this degree

Fall Term 1		Hours
BUS 190	Integrated Business and Value Creation	3
ENGL 101	Writing and Rhetoric I	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		16
Spring Term 1		Hours
ACCT 201	Introduction to Financial Accounting	3
ENGL 102	Writing and Rhetoric II	3
Elective Course		2
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
ECON 201 OR ECON 202 OR ECON 272		3
Hours		15
Fall Term 2		Hours
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
B.A. Course Requirement		3
Elective Course		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		16
Spring Term 2		Hours
B.A. Course Requirement		3
Elective Course		3
Scientific Ways of Knowing Course		4
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Hours		14
Fall Term 3		Hours
UPDV Foreign Language, Major Elective Course		3
UPDV Foreign Language, Major Elective Course		3
International Course		3
B.A. Course Requirement		3
ENTR 414 OR FIN 301 OR MHR 311 OR MIS 350 OR MKTG 321 OR OM 370 OR OM 378		3
Hours		15
Spring Term 3		Hours
UPDV Foreign Language, Major Elective Course		3
UPDV Foreign Language, Major Elective Course		3
American Diversity Course		3
Elective Course		3
ENTR 414 OR FIN 301 OR MHR 311 OR MIS 350 OR MKTG 321 OR OM 370 OR OM 378		3
Hours		15
Fall Term 4		Hours
FLEN 307	Institutions of the European Union	3
UPDV Foreign Language, Major Elective Course		3
UPDV Foreign Language, Major Elective Course		3
Scientific Ways of Knowing Course		4
Elective Course		3
Hours		16

Spring Term 4		
FL 401	SGS Capstone Experience	1
UPDV Foreign Language, Major Elective Course		3
UPDV Business, Major Elective Course		3
Elective Course		3
ENR 414 OR FIN 301 OR MHR 311 OR MIS 350 OR MKTG 321 OR OM 370 OR OM 378		3
Hours		13
Total Hours		120

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1. **Communicative Proficiency:** Students will demonstrate foreign language proficiency in writing, speaking, listening, and reading.
2. **Analytical Ability:** Students will evaluate the ways an international experience impacted their problem solving skills, language ability, and social skills.
3. **Cultural Understanding:** Students will demonstrate an increased understanding of the interconnectedness between language, culture, and its people.
4. **Acquisition of knowledge:** Students will compare the linguistic, political, artistic, and/or social customs of another culture to their experiences in the United States.
5. **Citizenship:** Students will analyze the ways in which an international experience impacted them as global citizens.

Modern Language Study Undergraduate Academic Certificate

Completion of the certificate documents students' novice proficiency in their chosen language/languages and their knowledge of the fundamentals of second-language acquisition and intercultural communication. These skills prepare students to enter the diverse workforce in the global economy where effective communication and collaboration with diverse colleagues and clients from a range of cultural, ethnic, and linguistic backgrounds is essential.

Note: Credits earned via Vertically Related Course Credit (Regulation I-2-d) may not be used to satisfy the curricular requirements of this academic certificate.

Code	Title	Hours
FL 201	Exploration of Language Acquisition and Intercultural Communication	1
12 credits from the following:		12
CHIN 101	Elementary Chinese I	
CHIN 102	Elementary Chinese II	
CHIN 201	Intermediate Chinese I	
CHIN 202	Intermediate Chinese II	
FREN 101	Elementary French I	
FREN 102	Elementary French II	
FREN 201	Intermediate French I	
FREN 202	Intermediate French II	

GERM 101	Elementary German I
GERM 102	Elementary German II
GERM 201	Intermediate German I
GERM 202	Intermediate German II
JAPN 101	Elementary Japanese I
JAPN 102	Elementary Japanese II
JAPN 201	Intermediate Japanese I
JAPN 202	Intermediate Japanese II
SPAN 101	Elementary Spanish I
SPAN 102	Elementary Spanish II
SPAN 201	Intermediate Spanish I
SPAN 202	Intermediate Spanish II

Total Hours **13**

1. Communicative Proficiency:

Students will communicate in basic foreign language skills. Students will use elementary structures and vocabulary to discuss such things as daily activities, greetings, routines and habits, family, and personal interests. Students will have the skills necessary to carry on very elementary conversations in their language(s) of study.

-Aligned with the following UI learning outcomes:

2 – Think and create

3 - Communicate

2. Analytical Ability:

Students will create basic original thoughts in their language(s) of study. Students will gain knowledge of the structure of the language(s) and will therefore be able to use the vocabulary learned to form new thoughts and basic sentences. This ability will grow as students become more and more familiar with the structure of the language(s) of study.

-Aligned with the following UI learning outcomes:

1 – Learn and Integrate

3 – Communicate

4 – Clarify Purpose and Perspective

5 – Practice Citizenship

3. Cultural Understanding and Acquisition of Knowledge:

Students will gain a greater understanding of and appreciation for cultures in which

the language(s) of study are spoken, particularly in terms of geography, demography, and the vast differences between the target culture(s) and U.S. culture. Students will begin to think critically about the influence of other cultures on North American society as well as the global and personal connections made by learning about other cultures and peoples.

-Aligned with the following UI learning outcomes:

1 – Learn and Integrate

2 – Think and create

4 – Clarify Purpose and Perspective

5 – Practice Citizenship

Spanish (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)), the general requirements for the B.A. degree, and:

Code	Title	Hours
FL 401	SGS Capstone Experience	1
SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
SPAN 301	Advanced Grammar	3

SPAN 302	Advanced Composition	3
SPAN 305	Culture and Institutions of Spain	3
SPAN 306	Culture and Institutions of Latin America	3
30 Credits of upper-division Spanish Coursework ^{1,2,3,4}		30
A second foreign language (elementary and intermediate or equivalent) or a minor in International Studies ⁵		16-18
STAMP Exit Exam		
One of the following:		
International Experience (Minimum of 8 weeks) ⁶		
FLEN 401	Topics in Global Studies	

1
The 30 credits of upper-division Spanish coursework includes SPAN 301, SPAN 302, SPAN 305, and SPAN 306.

2
The 30 credits of upper-division Spanish coursework must include a minimum of 9 credits at the 400-level.

3
The 30 credits of upper-division Spanish coursework may include no more than 6 credits of FLEN coursework. The remaining credits must be in SPAN coursework.

4
The 30 credits of upper-division Spanish coursework must include a minimum of 9 credits completed on campus.

5
This requirement is waived for students with a double major (Spanish plus another major)

6
Studying abroad is highly recommended, and the international experience option may be fulfilled by completing an approved study abroad program or international internship or faculty-led experience or a combination of all. This experience (completed in Spanish) should take place after the student has finished language study through the intermediate (200) level. The study abroad program or the internship must receive prior approval from the student's major advisor.

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
SPAN 101	Elementary Spanish I	4
Social and Behavioral Ways of Knowing Course		3
Mathematical Ways of Knowing Course		3
Elective Course		2
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
SPAN 102	Elementary Spanish II	4
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		2
Social and Behavioral Ways of Knowing Course		3
Hours		15
Fall Term 2		Hours
SPAN 201	Intermediate Spanish I	4
Scientific Ways of Knowing Course		4
B.A. Course Requirement		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101		4
Hours		15
Spring Term 2		Hours
SPAN 202	Intermediate Spanish II	4

Elective Course	3	
Scientific Ways of Knowing Course	4	
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102	4	
Hours		15
Fall Term 3		Hours
SPAN 301	Advanced Grammar	3
B.A. Course Requirement		3
B.A. Course Requirement		3
Elective Course		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201		4
Hours		16
Spring Term 3		Hours
FL 401	SGS Capstone Experience	1
SPAN 302	Advanced Composition	3
UPDV SPAN or FLEN, Major Elective Course		3
Elective Course		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202		4
Hours		14
Fall Term 4		Hours
SPAN 305	Culture and Institutions of Spain	3
400-level Spanish, Major Elective Course		3
UPDV SPAN, Major Elective Course		3
UPDV SPAN or FLEN, Major Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		Hours
SPAN 306	Culture and Institutions of Latin America	3
400-level Spanish, Major Elective Course		3
400-level Spanish, Major Elective Course		3
American Diversity Course		3
Elective Course		3
Hours		15
Total Hours		120

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- 1. Communicative Proficiency:** Students will demonstrate foreign language proficiency in writing, speaking, listening, and reading.
- 2. Analytical Ability:** Students will evaluate the ways an international experience impacted their problem solving skills, language ability, and social skills.
- 3. Cultural Understanding:** Students will demonstrate an increased understanding of the interconnectedness between language, culture, and its people.
- 4. Acquisition of knowledge:** Students will compare the linguistic, political, artistic, and/or social customs of another culture to their experiences in the United States.
- 5. Citizenship:** Students will analyze the ways in which an international experience impacted them as global citizens.

Spanish Minor

Code	Title	Hours
SPAN 101	Elementary Spanish I	4
SPAN 102	Elementary Spanish II	4

SPAN 201	Intermediate Spanish I	4
SPAN 202	Intermediate Spanish II	4
Upper-Division Spanish Courses ¹		
Select 9 credits of upper-division Spanish courses: ²		9
Total Hours		25

1

Nine credits of upper-division Spanish courses may include SPAN 301 and SPAN 302, but may not include lab-based or FLEN courses.

Students must complete 6 of these 9 credits of upper-division coursework at the University of Idaho to complete the Spanish minor.

2

SPAN 301, SPAN 302, and SPAN 310 are available online.

Courses to total 25 credits for this minor

School of Journalism and Mass Media

Robin Johnson, Director (347 Admin. Bldg 83844-3178; phone 208-885-6458).

The University of Idaho School of Journalism and Mass Media is Idaho's only accredited program for the study of journalism, mass communication, and related fields. The school offers bachelor's degrees in five fields: advertising, broadcasting and digital media, film and television studies, journalism, and public relations.

Students with degrees from the school pursue careers with advertising agencies, radio and television stations and networks, film and video production companies, cable and satellite operations, newspapers and magazines, other print and online media, and public relations firms. They also work as public information specialists for non-profit agencies, private corporations and within the government. Many graduates seek advanced degrees in law, public administration, strategic communication, and the humanities and social sciences.

The school's curriculum is based on a premise that journalists, broadcasters, film and television producers, public relations professionals, and advertising executives should be broadly educated. Accordingly, students must take at least 75 of the 120 credits needed for graduation outside the school. As a unit of the College of Letters, Arts and Social Sciences (p. 310), the school also provides conceptual courses to students in other fields of study as well as university General Education core courses related to the role of media in a global society.

Students seeking the B.A. degree are required to demonstrate proficiency in a foreign language; those seeking the B.S. degree must complete an 18-credit minor or area of emphasis.

Students enrolled in a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media major may not double major in any of these four programs. Students enrolled in the Film and Television Studies major may not double major in Broadcasting and Digital Media.

Students enrolled in a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media major may not pursue a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media minor. Students enrolled in the Film and Television Studies major may not pursue a minor in Broadcasting and Digital Media.

Many students in the School of Journalism and Mass Media supplement their academic experience by working for the independent student media outlets on campus, including the Argonaut newspaper, the Blot magazine, and KUOI-FM. Students are also strongly encouraged to pursue internships at professional media organizations throughout the region.

The school has been accredited since 2014 by the Accrediting Council on Education in Journalism and Mass Communications (ACEJMC), the agency responsible for the evaluation of professional journalism and mass communications programs in colleges and universities. The council found the UI's School of Journalism and Mass Media in full compliance with nine standards dealing with governance, faculty qualifications, diversity, curriculum, facilities, and student services. For more information about the benefits of accreditation, please see: www.acejmc.org/accreditation/value-of-accreditation/ (<http://www.acejmc.org/accreditation/value-of-accreditation/>).

Majors

- Advertising (B.A. or B.S.) (p. 377)
- Broadcasting and Digital Media (B.A. or B.S.) (p. 379)
- Film and Television (B.A. or B.S.) (p. 381)
- Journalism (B.A. or B.S.) (p. 383)
- Public Relations (B.A. or B.S.) (p. 385)

Minors

- Advertising Minor (p. 379)
- Broadcasting and Digital Media Minor (p. 380)
- Film and Television Production Minor (p. 381)
- Journalism Minor (p. 384)
- Public Relations Minor (p. 386)

Certificates

- Social Media Management Academic Certificate (p. 386)

Journalism and Mass Media Undergraduate Curricular Requirements

A minimum cumulative university grade-point average of 2.50 is required of students in order to graduate with a degree from the School of Journalism and Mass Media.

A student who graduates with a major in the School of Journalism and Mass Media must complete a minimum of 120 credits of which a maximum of 12 credits can come from experiential courses (JAMM 497, JAMM 498, JAMM 499). Students can receive no more than 6 credit hours for JAMM 498 experience; students can repeat JAMM 498 one time. Students must obtain approval from the School of Journalism and Mass Media to apply internship credit toward a degree from the school.

Majors cannot apply more than 48 hours of courses in Journalism and Mass Media toward the 120-credit degree requirement and are required to take no fewer than 60 hours in the liberal arts and sciences. Majors may count no more than 8 hours of courses in Idaho Fitness courses

(IFIT 106, IFIT 107, and IFIT 108) toward the 120 credits required for the degree.

Candidates for the B.S. degree are required to complete a second major, an academic minor or area of emphasis of at least 18 credits outside the School of Journalism and Mass Media. The emphasis area must be approved by the student's academic advisor.

JAMM 100, JAMM 121 and JAMM 122 must be completed with a grade of 'C' or better before a major may enroll in any other Journalism and Mass Media courses. All students must complete a minimum of 58 credits before enrolling in any upper-division course (numbered 300 or above) offered by the school.

No more than 18 credits of journalism and mass media courses from other institutions may be applied to a degree from the School of Journalism and Mass Media.

Students enrolled in a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media major may not double major in any of these four programs. Students enrolled in the Film and Television Studies major may not double major in Broadcasting and Digital Media but may double major in Journalism, Public Relations, or Advertising.

Students enrolled in a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media major may not pursue a Journalism, Public Relations, Advertising, or Broadcasting and Digital Media minor.

Students enrolled in Journalism, Public Relations, or Advertising major may minor in Film and Television Production.

Students enrolled in the Film and Television Studies major may not pursue a minor in Broadcasting and Digital Media nor a minor in Film and Television Production.

Courses required in all majors in the School of Journalism and Mass Media (except Film & Television Studies):

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
JAMM 341	Mass Media Ethics	3
JAMM 448	Law of Mass Media	3
Select two courses in Diversity and Global Perspectives:		6
JAMM 340	Media and Diversity	
JAMM 441	(s)Adv Concepts Media/Diversity	
JAMM 445	History of Mass Media	
JAMM 446	Women in the Media	
JAMM 490	Issues in Global Media	
Select six credits of electives in Journalism and Mass Media ¹		6
Total Hours		30

1

Electives: Three must be upper division credits.

Students in the School are required to complete at least 15 credit hours within one of the four majors: Advertising; Broadcasting and Digital Media; Journalism; or Public Relations.

Advertising (B.A. or B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 376)		28
Major Requirements		15
Total Hours		43

Major Requirements

Code	Title	Hours
JAMM 252	Introduction to Strategic Communications	3
JAMM 267	Introduction to Media Design	3
JAMM 367	Social Media Management and Analytics	3
JAMM 466	Media Campaign Strategy	3
JAMM 468	Advanced Media Design	3
Total Hours		15

Advertising majors are encouraged to apply for the Advertising Competition Team, JAMM 469.

Courses to total 120 credits for this degree

Advertising (B.A.)

Fall Term 1		Hours
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
JAMM 100	Media and Society	3
Mathematical Ways of Knowing Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		16
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Scientific Ways of Knowing Course		4
American Diversity Course		3
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		14
Fall Term 2		Hours
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
Scientific Ways of Knowing Course		4
Social and Behavioral Ways of Knowing Course		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		17
Spring Term 2		Hours
JAMM 252	Introduction to Strategic Communications	3
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
International Course		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Hours		16
Fall Term 3		Hours
JAMM 267	Introduction to Media Design	3
JAMM, Major Elective Course		3
B.A. Course Requirement		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		15

Spring Term 3		
JAMM 367	Social Media Management and Analytics	3
JAMM, Major Elective Course		3
Elective Course		3
Elective Course		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
Hours		15
Fall Term 4		
JAMM 341	Mass Media Ethics	3
JAMM 466	Media Campaign Strategy	3
B.A. Course Requirement		3
B.A. Course Requirement		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
Hours		15
Spring Term 4		
JAMM 448	Law of Mass Media	3
JAMM 468	Advanced Media Design	3
Elective Course		3
Elective Course		3
Elective Course		2
Hours		14
Total Hours		122

Advertising (B.S.)

Fall Term 1			Hours
COMM 101	Fundamentals of Oral Communication	3	
ENGL 101	Writing and Rhetoric I	3	
JAMM 100	Media and Society	3	
Mathematical Ways of Knowing Course		3	
Humanistic and Artistic Ways of Knowing Course		3	
1 credit Elective Course		1	
Hours		16	
Spring Term 1			
ENGL 102	Writing and Rhetoric II	3	
American Diversity Course		3	
Scientific Ways of Knowing Course		4	
Social and Behavioral Ways of Knowing Course		3	
Elective Course		2	
Hours		15	
Fall Term 2			
JAMM 121	Media Writing	3	
JAMM 122	Content Creation	1	
Scientific Ways of Knowing Course		4	
Social and Behavioral Ways of Knowing Course		3	
International Course		3	
1 credit Elective Course		1	
Hours		15	
Spring Term 2			
JAMM 252	Introduction to Strategic Communications	3	
Humanistic and Artistic Ways of Knowing Course		3	
Elective Course		3	
Elective Course		3	
Elective Course		3	
Hours		15	
Fall Term 3			
JAMM 267	Introduction to Media Design	3	
JAMM, Major Elective Course		3	
B.S. Course Requirement		3	

B.S. Course Requirement		3
Elective Course		3
Hours		15
Spring Term 3		
JAMM 367	Social Media Management and Analytics	3
JAMM, Major Elective Course		3
B.S. Course Requirement		3
B.S. Course Requirement		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
Hours		15
Fall Term 4		
JAMM 341	Mass Media Ethics	3
JAMM 466	Media Campaign Strategy	3
Elective Course		3
Elective Course		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
Hours		15
Spring Term 4		
JAMM 448	Law of Mass Media	3
JAMM 468	Advanced Media Design	3
Elective Course		3
Elective Course		3
Elective Course		2
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

The School of Journalism and Mass Media curriculum for Advertising enables our students to learn the values and skills that will prepare them for work and citizenship in a diverse and global society.

JAMM Values

1. Apply the principles and laws of freedom of speech and press in a global context and in the United States
2. Demonstrate an understanding of the multicultural history and role of professionals, individuals and institutions in shaping communications
3. Demonstrate culturally proficient communication that empowers those traditionally disenfranchised in society, especially as grounded in gender, race, ethnicity, sexual orientation and ability, domestically and globally, across communication and media contexts
4. Understand concepts and apply theories in the use and presentation of images and information
5. Demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity

JAMM Skills

1. Apply critical thinking skills in conducting research and evaluating information by methods appropriate to the communications professions in which they work

- Write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply basic numerical and statistical concepts
- Apply tools and technologies appropriate for the communications professions in which they work

Advertising Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
JAMM 252	Introduction to Strategic Communications	3
JAMM 267	Introduction to Media Design	3
6 credits from the following:		6
JAMM 298	Internship	
JAMM 367	Social Media Management and Analytics	
JAMM 466	Media Campaign Strategy	
JAMM 468	Advanced Media Design	
JAMM 469	Advertising Competition Team	
JAMM 498	Internship	
Total Hours		21

Courses to total 19 credits for this minor

Broadcasting and Digital Media (B.A. OR B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 376)		28
Major Requirements		15-16
Total Hours		43-44

Major Requirements

Code	Title	Hours
JAMM 275	Introduction to Film and TV Production	4
JAMM 322	Broadcast News	3
JAMM 478	Broadcast Management	3
Courses selected from the following:		5-6
JAMM 323	Sports Reporting	
JAMM 370	Podcasting	
JAMM 374	Intermediate Film and TV Production	
JAMM 473	Cinematography and Lighting	
JAMM 276	Video Post-Production	
JAMM 477	Documentary Film and TV	
Total Hours		15-16

Courses to total 120 credits for this degree

Broadcasting and Digital Media (B.A.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
COMM 101	Fundamentals of Oral Communication	3
JAMM 100	Media and Society	3
Scientific Ways of Knowing Course		4
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		17
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
Mathematical Ways of Knowing Course		3
American Diversity Course		3
Elective Course		2
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		15
Fall Term 2		Hours
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
International Course		3
Social and Behavioral Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		19
Spring Term 2		Hours
JAMM 275	Introduction to Film and TV Production	4
Scientific Ways of Knowing Course		4
B.A. Course Requirement		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Hours		15
Fall Term 3		Hours
JAMM 322	Broadcast News	3
Social and Behavioral Ways of Knowing Course		3
B.A. Course Requirement		3
B.A. Course Requirement		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
Hours		15
Spring Term 3		Hours
JAMM, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		2
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
JAMM 276 OR JAMM 323 OR JAMM 374 OR JAMM 422 OR JAMM 447 OR JAMM 473 OR FTV 475 OR FTV 476		3
Hours		14
Fall Term 4		Hours
JAMM 341	Mass Media Ethics	3
JAMM, Elective Course		3
Elective Course		3
JAMM 276 OR JAMM 322 OR JAMM 323 OR JAMM 374 OR JAMM 422 OR JAMM 447 OR JAMM 473 OR JAMM 478 OR FTV 475 OR FTV 476		3
JAMM 276 OR JAMM 322 OR JAMM 323 OR JAMM 374 OR JAMM 422 OR JAMM 447 OR JAMM 473 OR JAMM 478 OR FTV 475 OR FTV 476		3
Hours		15
Spring Term 4		Hours
JAMM 448	Law of Mass Media	3
JAMM 478	Broadcast Management	3
Elective Course		3

Elective Course	3
Hours	12
Total Hours	122

Broadcasting and Digital Media (B.S.)

Fall Term 1	Hours
COMM 101 Fundamentals of Oral Communication	3
ENGL 101 Writing and Rhetoric I	3
JAMM 100 Media and Society	3
Scientific Ways of Knowing Course	4
Mathematical Ways of Knowing Course	3
Hours	16

Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
Humanistic and Artistic Ways of Knowing Course	3
American Diversity Course	3
Elective Course	3
Elective Course	3
Hours	15

Fall Term 2	Hours
JAMM 121 Media Writing	3
JAMM 122 Content Creation	3
International Course	3
Social and Behavioral Ways of Knowing Course	3
B.S. Course Requirement	3
B.S. Course Requirement	3
Hours	18

Spring Term 2	Hours
JAMM 275 Introduction to Film and TV Production	4
Scientific Ways of Knowing Course	4
Elective Course	3
Elective Course	3
Hours	14

Fall Term 3	Hours
JAMM 322 Broadcast News	3
Social and Behavioral Ways of Knowing Course	3
Elective Course	3
B.S. Course Requirement	3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490	3
Hours	15

Spring Term 3	Hours
JAMM, Major Elective Course	3
Humanistic and Artistic Ways of Knowing Course	3
B.S. Course Requirement	3
JAMM 276 OR JAMM 323 OR JAMM 374 OR JAMM 422 OR JAMM 447 OR JAMM 473 OR FTV 475 OR FTV 476	3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490	3
Hours	15

Fall Term 4	Hours
JAMM 341 Mass Media Ethics	3
JAMM, Major Elective Course	3
Elective Course	3
Elective Course	3
JAMM 276 OR JAMM 323 OR JAMM 374 OR JAMM 422 OR JAMM 447 OR JAMM 473 OR FTV 475 OR FTV 476	3
Hours	15

Spring Term 4	Hours
JAMM 448 Law of Mass Media	3

JAMM 478 Broadcast Management	3
Elective Course	3
Elective Course	3
Elective Course	2
Hours	14
Total Hours	122

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The School of Journalism and Mass Media curriculum for Broadcasting and Digital Media enables our students to learn the values and skills that will prepare them for work and citizenship in a diverse and global society.

JAMM Values

1. Apply the principles and laws of freedom of speech and press in a global context and in the United States
2. Demonstrate an understanding of the multicultural history and role of professionals, individuals and institutions in shaping communications
3. Demonstrate culturally proficient communication that empowers those traditionally disenfranchised in society, especially as grounded in gender, race, ethnicity, sexual orientation and ability, domestically and globally, across communication and media contexts
4. Understand concepts and apply theories in the use and presentation of images and information
5. Demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity

JAMM Skills

1. Apply critical thinking skills in conducting research and evaluating information by methods appropriate to the communications professions in which they work
2. Write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve
3. Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
4. Apply basic numerical and statistical concepts
5. Apply tools and technologies appropriate for the communications professions in which they work

Broadcasting and Digital Media Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
JAMM 275	Introduction to Film and TV Production	4
JAMM 322	Broadcast News	3
Select two electives from the following:		6
JAMM 276	Video Post-Production	
JAMM 323	Sports Reporting	
JAMM 341	Mass Media Ethics	

JAMM 370	Podcasting	
JAMM 374	Intermediate Film and TV Production	
JAMM 477	Documentary Film and TV	
JAMM 478	Broadcast Management	
Total Hours		22

Courses to total 20 credits for this minor

Film and Television Production Minor

Code	Title	Hours
ENGL 231	Introduction to Screenwriting	3
FTV 100	Film History and Aesthetics	3
FTV 122	Audio-Video Foundations	3
JAMM 275	Introduction to Film and TV Production	4
JAMM 374	Intermediate Film and TV Production	3
Choose two courses from the following:		6
ENGL 447	Screenwriting	
FTV 425	Directing for the Screen	
FTV 475	Advanced Filmmaking I	
FTV 476	Advanced Filmmaking II	
JAMM 276	Video Post-Production	
JAMM 477	Documentary Film and TV	
Total Hours		22

Courses to total 20 credits for this minor.

Film and Television (B.A. OR B.S.)

Note: Students must have a 2.5 GPA to major in, and must attain a 2.5 GPA to graduate with, the Film and Television degree.

Prerequisite: FTV 100 must be completed with a 'C' or above before enrolling in other courses in the sequence.

Film and Television is an interdisciplinary degree taught on the film school model, whereby students will learn how to think critically and historically about film and culture while learning the fundamentals of film writing and filmmaking. This degree prepares students to meet the growing demand for digitally fluent and professionally trained multimedia storytelling across the media industries, as well as in public institutions, government, and business.

Required coursework includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
ENGL 231	Introduction to Screenwriting	3
FTV 100	Film History and Aesthetics	3
FTV 122	Audio-Video Foundations	3
FTV 200	Global Film Styles	3
JAMM 275	Introduction to Film and TV Production	4
JAMM 276	Video Post-Production	3
JAMM 374	Intermediate Film and TV Production	3
Select 6 credits of additional Production:		6
ENGL 447	Screenwriting	
FTV 425	Directing for the Screen	
JAMM 473	Cinematography and Lighting	

JAMM 477	Documentary Film and TV	
Select 6 credits of History Culture and Theory courses, 3 of which must be in under-served, non-canonical, or international film; reflecting cultural diversity(*):		6
AIST 320	Native American & Indigenous Film (*)	
ENGL 329	Literature and Film	
FLEN 315	French/Francophone Cinema in Translation (*)	
FLEN 322	German Culture through Film (*)	
FLEN 326	Chinese Cinema in Translation (*)	
FLEN 331	Japanese Anime (*)	
FLEN 390	Representation and Reality in Spanish Cinema (*)	
FLEN 391	Hispanic Film (*)	
FREN 419	French & Francophone Cinema (*)	
HIST 414	History and Film	
GERM 307	German Film (*)	
JAMM 339	Crime and the Media	
JAMM 340	Media and Diversity (*)	
JAMM 378	American Television Genres	
JAMM 445	History of Mass Media	
PHIL 221	Philosophy in Film	
SPAN 422	Mexican Culture through Cinema (*)	
SPAN 423	Culture and Identity in Spanish Cinema (*)	
SPAN 424	Human Rights and Hispanic Cinema (*)	

Select 6 additional credits of electives from the following, or other courses if approved by director of Film & Television: 6

AIST 320	Native American & Indigenous Film	
ENGL 329	Literature and Film	
ENGL 447	Screenwriting	
FLEN 315	French/Francophone Cinema in Translation	
FLEN 322	German Culture through Film	
FLEN 326	Chinese Cinema in Translation	
FLEN 390	Representation and Reality in Spanish Cinema	
FLEN 391	Hispanic Film	
FREN 419	French & Francophone Cinema	
FTV 425	Directing for the Screen	
GERM 307	German Film	
HIST 414	History and Film	
JAMM 276	Video Post-Production	
JAMM 339	Crime and the Media	
JAMM 374	Intermediate Film and TV Production	
JAMM 378	American Television Genres	
JAMM 379	Hollywood Portrayals of Journalists	
JAMM 473	Cinematography and Lighting	
JAMM 477	Documentary Film and TV	
PHIL 221	Philosophy in Film	
SPAN 423	Culture and Identity in Spanish Cinema	
SPAN 424	Human Rights and Hispanic Cinema	
THE 102	Introduction to Design	
THE 105	Basics of Performance I	
THE 106	Basics of Performance II	
THE 201	Scene Design I	
THE 202	Costume Design I	
THE 205	Lighting Design I	

THE 305	Intermediate Acting I	
THE 306	Intermediate Acting II	
THE 410	Costume Design II	
THE 465	Advanced Scene Design	
THE 471	Directing	
Senior Experience		6
FTV 475	Advanced Filmmaking I	
FTV 476	Advanced Filmmaking II	
Total Hours		46

Courses to total 120 credits for this degree**Film and Television (B.A.)**

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
FTV 100	Film History and Aesthetics	3
Social and Behavioral Ways of Knowing Course		3
Oral Communication Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
FTV 122	Audio-Video Foundations	3
ENGL 231	Introduction to Screenwriting	3
Mathematical Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		19
Fall Term 2		
JAMM 275	Introduction to Film and TV Production	4
American Diversity Course		3
Elective Course		1
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Hours		12
Spring Term 2		
FTV 200	Global Film Styles	3
Scientific Ways of Knowing Course		4
Social and Behavioral Ways of Knowing Course		3
History, Theory and Culture, Major Elective Course		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Hours		17
Fall Term 3		
History, Theory and Culture, Major Elective Course		3
B.A. Course Requirement		3
Scientific Ways of Knowing Course		4
Elective Course		3
ENGL 447 OR FTV 425 OR JAMM 473 OR JAMM 477		3
Hours		16
Spring Term 3		
JAMM 374	Intermediate Film and TV Production	3
B.A. Course Requirement		3
Elective Course		3
Elective Course		3
ENGL 447 OR FTV 425 OR JAMM 473 OR JAMM 477		3
Hours		15
Fall Term 4		
JAMM 276	Video Post-Production	3
FTV 475	Advanced Filmmaking I	3
Film & Television Studies elective, Major Elective Course		3
Elective Course		3

B.A. Course Requirement		3
Hours		15
Spring Term 4		
FTV 476	Advanced Filmmaking II	3
Film & Television Studies elective, Major Elective Course		3
Elective Course		3
Elective Course		3
Hours		12
Total Hours		122

Film and Television (B.S.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
FTV 100	Film History and Aesthetics	3
Mathematical Ways of Knowing Course		3
Oral Communication Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
FTV 122	Audio-Video Foundations	3
ENGL 231	Introduction to Screenwriting	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Elective Course		3
Hours		18
Fall Term 2		
JAMM 275	Introduction to Film and TV Production	4
American Diversity Course		3
B.S. Course Requirement		3
Elective Course		3
Hours		13
Spring Term 2		
FTV 200	Global Film Styles	3
History, Theory and Culture, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
B.S. Course Requirement		3
Hours		16
Fall Term 3		
History, Theory and Culture, Major Elective Course		3
Elective Course		3
B.S. Course Requirement		3
Scientific Ways of Knowing Course		4
ENGL 447 OR FTV 425 OR JAMM 473 OR JAMM 477		3
Hours		16
Spring Term 3		
JAMM 374	Intermediate Film and TV Production	3
B.S. Course Requirement		3
Elective Course		3
Elective Course		3
ENGL 447 OR FTV 425 OR JAMM 473 OR JAMM 477		2
Hours		14
Fall Term 4		
JAMM 276	Video Post-Production	3
FTV 475	Advanced Filmmaking I	3
Film & Television Studies elective, Major Elective Course		3
Elective Course		3
Elective Course		3
Hours		15

Spring Term 4

FTV 476	Advanced Filmmaking II	3
Film & Television Studies elective, Major Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Total Hours		122

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1. Apply knowledge of film style and a diverse understanding of film & television history to an individual creative vision.
2. Light and shoot professional quality video.
3. Edit video to professional standards.
4. Record and edit professional quality sound.
5. Write and interpret film and television scripts.
6. Direct crew and creative talent on film and video projects.
7. Produce film and video projects by managing the budget and logistics of a shoot.

Journalism (B.A. OR B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 376)		28
Major Requirements		15
Total Hours		43

Major Requirements

Code	Title	Hours
JAMM 225	Reporting I	3
JAMM 327	Reporting II	3
JAMM 422	Advanced Journalism	3
Select 6 credits from the following:		6
JAMM 322	Broadcast News	
JAMM 323	Sports Reporting	
JAMM 325	Publications Editing	
JAMM 328	Science Writing	
JAMM 370	Podcasting	
JAMM 425	Magazine Writing	
JAMM 426	Narrative Journalism	
Total Hours		15

Courses to total 120 credits for this degree¹

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Journalism majors are encouraged to pursue their studies across media, including print, broadcast, and online journalism.

Journalism (B.A.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
COMM 101	Fundamentals of Oral Communication	3
JAMM 100	Media and Society	3
Mathematical Ways of Knowing Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		16

Spring Term 1

ENGL 102	Writing and Rhetoric II	3
American Diversity Course		3
Scientific Ways of Knowing Course		4
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		14

Fall Term 2

JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
Social and Behavioral Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201		4
Elective Course		1
Hours		17

Spring Term 2

JAMM 225	Reporting I	3
Scientific Ways of Knowing Course		4
B.A. Course Requirement		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4
Elective Course		1
Hours		15

Fall Term 3

JAMM 327	Reporting II	3
Social and Behavioral Ways of Knowing Course		3
JAMM, Major Elective Course		3
Elective Course		3
JAMM 322 OR JAMM 323 OR JAMM 325 OR JAMM 328 OR JAMM 370 OR JAMM 422 OR JAMM 425		3
Hours		15

Spring Term 3

UPDV JAMM, Major Elective Course		3
B.A. Course Requirement		3
Elective Course		3
Elective Course		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
Hours		15

Fall Term 4

JAMM 341	Mass Media Ethics	3
Elective Course		3
Elective Course		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
JAMM 322 OR JAMM 323 OR JAMM 325 OR JAMM 328 OR JAMM 370 OR JAMM 422 OR JAMM 425		3
Hours		15

Spring Term 4

JAMM 448	Law of Mass Media	3
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JAMM 422	Advanced Journalism	3
B.A. Course Requirement		3
International Course		3
Elective Course		3
Hours		15
Total Hours		122

Journalism (B.S.)

	Hours	
Fall Term 1		
ENGL 101	Writing and Rhetoric I	3
COMM 101	Fundamentals of Oral Communication	3
JAMM 100	Media and Society	3
Social and Behavioral Ways of Knowing Course		3
Mathematical Ways of Knowing Course		3
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
American Diversity Course		3
Scientific Ways of Knowing Course		4
Elective Course		3
Elective Course		3
Hours		16
Fall Term 2		
JAMM 121	Media Writing	3
JAMM 122	Content Creation	1
International Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		13
Spring Term 2		
JAMM 225	Reporting I	3
Scientific Ways of Knowing Course		4
UPDV JAMM, Major Elective Course		3
Major/Minor/Emphasis course, Major Elective Course		3
Elective Course		3
Hours		16
Fall Term 3		
JAMM 327	Reporting II	3
Social and Behavioral Ways of Knowing Course		3
UPDV JAMM, Major Elective Course		3
Major/Minor/Emphasis course, Major Elective Course		3
Major/Minor/Emphasis course, Major Elective Course		3
Hours		15
Spring Term 3		
Humanistic and Artistic Ways of Knowing Course		3
Major/Minor/Emphasis course, Major Elective Course		3
Elective Course		3
JAMM 322 OR JAMM 323 OR JAMM 325 OR JAMM 328 OR JAMM 370 OR JAMM 422 OR JAMM 425		3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3
Hours		15
Fall Term 4		
JAMM 341	Mass Media Ethics	3
Major/Minor/Emphasis course, Major Elective Course		3
Elective Course		3
JAMM 322 OR JAMM 323 OR JAMM 325 OR JAMM 328 OR JAMM 370 OR JAMM 422 OR JAMM 425		3

JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490	3
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Hours		15
Spring Term 4		
JAMM 448	Law of Mass Media	3
JAMM 422	Advanced Journalism	3
Major/Minor/Emphasis course, Major Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

The School of Journalism and Mass Media curriculum for Journalism enables our students to learn the values and skills that will prepare them for work and citizenship in a diverse and global society.

JAMM Values

1. Apply the principles and laws of freedom of speech and press in a global context and in the United States
2. Demonstrate an understanding of the multicultural history and role of professionals, individuals and institutions in shaping communications
3. Demonstrate culturally proficient communication that empowers those traditionally disenfranchised in society, especially as grounded in gender, race, ethnicity, sexual orientation and ability, domestically and globally, across communication and media contexts
4. Understand concepts and apply theories in the use and presentation of images and information
5. Demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity

JAMM Skills

1. Apply critical thinking skills in conducting research and evaluating information by methods appropriate to the communications professions in which they work
2. Write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve
3. Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
4. Apply basic numerical and statistical concepts
5. Apply tools and technologies appropriate for the communications professions in which they work

Journalism Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
JAMM 225	Reporting I	3

JAMM 327	Reporting II	3
Select two electives from the following:		6
JAMM 322	Broadcast News	
JAMM 323	Sports Reporting	
JAMM 325	Publications Editing	
JAMM 328	Science Writing	
JAMM 341	Mass Media Ethics	
JAMM 370	Podcasting	
JAMM 422	Advanced Journalism	
JAMM 425	Magazine Writing	
JAMM 426	Narrative Journalism	
Total Hours		21

Courses to total 19 credits for this minor

Public Relations (B.A. OR B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and the following:

Code	Title	Hours
School of Journalism and Mass Media Core (p. 376)		28
Major Requirements		15
Total Hours		43

Major Requirements

Code	Title	Hours
JAMM 252	Introduction to Strategic Communications	3
JAMM 350	Public Relations Writing and Production	3
JAMM 466	Media Campaign Strategy	3
Two From the Following:		6
JAMM 225	Reporting I	
JAMM 352	Event Planning and Management	
JAMM 444	Mass Media and Public Opinion	
JAMM 450	Public Relations Trends	
JAMM 458	Public Relations Research and Analytics	
Total Hours		15

Courses to total 120 credits for this degree

Public Relations (B.A.)

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
COMM 101	Fundamentals of Oral Communication	3
JAMM 100	Media and Society	3
Mathematical Ways of Knowing Course		3
CHIN 101 OR FREN 101 OR GERM 101 OR JAPN 101 OR AIST 101 OR SPAN 101		4
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
American Diversity Course		3
Scientific Ways of Knowing Course		4
CHIN 102 OR FREN 102 OR GERM 102 OR JAPN 102 OR AIST 102 OR SPAN 102		4
Hours		14
Fall Term 2		
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3

Scientific Ways of Knowing Course	4
Social and Behavioral Ways of Knowing Course	3
CHIN 201 OR FREN 201 OR GERM 201 OR JAPN 201 OR SPAN 201	4

Hours 17

Spring Term 2

JAMM 252	Introduction to Strategic Communications	3
Social and Behavioral Ways of Knowing Course		3
International Course		3
Humanistic and Artistic Ways of Knowing Course		3
CHIN 202 OR FREN 202 OR GERM 202 OR JAPN 202 OR SPAN 202		4

Hours 16

Fall Term 3

JAMM 225 OR JAMM 352 OR JAMM 444 OR JAMM 450 OR JAMM 458		3
JAMM, Major Elective Course		3
Elective Course		3
B.A. Course Requirement		3
Elective Course		3

Hours 15

Spring Term 3

JAMM 350	Public Relations Writing and Production	3
Humanistic and Artistic Ways of Knowing Course		3
JAMM, Major Elective Course		3
B.A. Course Requirement		6

Hours 15

Fall Term 4

JAMM 341	Mass Media Ethics	3
JAMM 225 OR JAMM 352 OR JAMM 444 OR JAMM 450 OR JAMM 458		3
Elective Course		6
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3

Hours 15

Spring Term 4

JAMM 448	Law of Mass Media	3
JAMM 466	Media Campaign Strategy	3
Elective Course		3
Elective Course		2
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490		3

Hours 14

Total Hours 122

Public Relations (B.S.)

Fall Term 1		Hours
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
JAMM 100	Media and Society	3
Mathematical Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
Scientific Ways of Knowing Course		4
Social and Behavioral Ways of Knowing Course		3
American Diversity Course		3
Elective Course		3
Hours		16
Fall Term 2		
JAMM 121	Media Writing	3
JAMM 122	Content Creation	1
Elective Course		3

Scientific Ways of Knowing Course	4
Social and Behavioral Ways of Knowing Course	3
Hours	14
Spring Term 2	
JAMM 252 Introduction to Strategic Communications	3
Elective Course	3
International Course	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
Hours	15
Fall Term 3	
JAMM 225 OR JAMM 352 OR JAMM 444 OR JAMM 450 OR JAMM 458	3
JAMM, Major Elective Course	3
Elective Course	3
B.S. Course Requirement	6
Hours	15
Spring Term 3	
JAMM 350 Public Relations Writing and Production	3
JAMM, Major Elective Course	3
Elective Course	3
B.S. Course Requirement	6
Hours	15
Fall Term 4	
JAMM 341 Mass Media Ethics	3
JAMM 225 OR JAMM 352 OR JAMM 444 OR JAMM 450 OR JAMM 458	3
Elective Course	3
Elective Course	3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490	3
Hours	15
Spring Term 4	
JAMM 448 Law of Mass Media	3
JAMM 466 Media Campaign Strategy	3
Elective Course	3
Elective Course	3
JAMM 339 OR JAMM 340 OR JAMM 378 OR JAMM 379 OR JAMM 426 OR JAMM 440 OR JAMM 443 OR JAMM 444 OR JAMM 445 OR JAMM 446 OR JAMM 477 OR JAMM 490	3
Hours	15
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

The School of Journalism and Mass Media curriculum for Public Relations enables our students to learn the values and skills that will prepare them for work and citizenship in a diverse and global society.

JAMM Values

1. Apply the principles and laws of freedom of speech and press in a global context and in the United States
2. Demonstrate an understanding of the multicultural history and role of professionals, individuals and institutions in shaping communications
3. Demonstrate culturally proficient communication that empowers those traditionally disenfranchised in society, especially as grounded

in gender, race, ethnicity, sexual orientation and ability, domestically and globally, across communication and media contexts

4. Understand concepts and apply theories in the use and presentation of images and information
5. Demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity

JAMM Skills

1. Apply critical thinking skills in conducting research and evaluating information by methods appropriate to the communications professions in which they work
2. Write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve
3. Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
4. Apply basic numerical and statistical concepts
5. Apply tools and technologies appropriate for the communications professions in which they work

Public Relations Minor

Code	Title	Hours
JAMM 100	Media and Society	3
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
JAMM 252	Introduction to Strategic Communications	3
JAMM 350	Public Relations Writing and Production	3
6 credits from the following:		6
JAMM 225	Reporting I	
JAMM 352	Event Planning and Management	
JAMM 367	Social Media Management and Analytics	
JAMM 425	Magazine Writing	
JAMM 444	Mass Media and Public Opinion	
JAMM 450	Public Relations Trends	
JAMM 458	Public Relations Research and Analytics	
JAMM 466	Media Campaign Strategy	
JAMM 498	Internship	

Total Hours 21

Courses to total 19 credits for this minor

Social Media Management Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
JAMM 121	Media Writing	3
JAMM 122	Content Creation	3
JAMM 252	Introduction to Strategic Communications	3
JAMM 365	Trends in Social Media	3
JAMM 367	Social Media Management and Analytics	3
Total Hours		15

Courses to total 15 credits for this certificate

Students completing the certificate in Social Media Management will be expected to:

- Understand concepts and apply theories in the use and presentation of images and information
- Apply critical thinking skills in conducting research and evaluating information by methods appropriate to the communications professions in which they work
- Write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve
- Critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness
- Apply basic numerical and statistical concepts
- Apply tools and technologies appropriate for the communications professions in which they work

College of Natural Resources

Dennis Becker, Dean; Steven R. Shook, Associate Dean; (202 College of Natural Resources Bldg.; 208-885-6442).

The College of Natural Resources began by offering a forestry degree in 1909. Since then, the college has expanded to offer degrees in forest & sustainable products (1914), rangeland ecology and management (1917), wildlife sciences (1942), fishery sciences (1951), ecology & ecosystems science (1999), conservation biology (1999), fire ecology and management (2007), forest nursery management & technology (2022), forest operations and technology (2022), and wildland fuel and fire technology.

The College prepares our students to be competent, responsible, and fulfilled individuals ready for careers in natural resources science and management across the world. Our curriculum combines physical, biological, and social sciences with essential humanities skills to empower students to make informed natural resource management decisions. We value experiential training in Idaho's real-life, outdoor "classrooms" as we equip new generations to lead the way to a sustainable future.

Departments

The College's departments are Fish and Wildlife Sciences; Forest, Rangeland and Fire Sciences; and Natural Resources and Society. Although these departments are separate entities, they integrate teaching, research, and service missions and are led by a shared philosophy of interdisciplinary resource management. Often, faculty hold joint appointments in more than one department, and degree programs include courses from multiple departments.

Degrees

The Bachelor of Science (B.S.) is offered in Conservation Biology, Ecology and Ecosystem Science, Environmental Science, Fire Ecology and Management, Fishery Sciences, Forest and Sustainable Products, Forestry, Rangeland Ecology and Management, and Wildlife Sciences.

The Associate of Science (A.S.) is offered in Forest Nursery Management and Technology, Forest Operations and Technology, and Wildland Fuel and Fire Technology.

Undergraduate minors include Aquaculture, Ecology, Environmental Communication, Fire Ecology and Management, Fishery Resources, Forest Operations, Forest Resources, Natural Resource Conservation, Rangeland Ecology and Management, Renewable Materials, and Wildlife Resources.

Graduate degrees include Master of Natural Resources (M.N.R.), Master of Science Natural Resources (M.S.), Master of Science Environmental Science (M.S., thesis and nonthesis options), Joint Master of Science Environmental Science (M.S.) and Juris Doctorate (J.D.), Ph.D. Environmental Science, and Ph.D. Natural Resources.

Location Advantages

From ponderosa pines in southern Idaho to mixed coniferous forest in northern Idaho, the state's forests and rangelands are an ideal place to learn about natural resources. Rangelands include sagebrush-grass and bunchgrass zones, and hundreds of lakes, streams, and boundless wilderness areas provide habitat for wildlife and fish as well as offering opportunities for wildland recreation. In Idaho, wood products, cattle,

sheep, wildlife of all species, world renowned game fish, and water are just a few of the resources that enhance students' learning experiences.

Facilities

Idaho's 37 million acres of public forest and range lands constitute a vast natural laboratory for students to experience "hands-on" training for logging, surveying, planting, and working in controlled burning crews.

The Frank Pitkin Forest Nursery in Moscow consists of 40 acres and three greenhouses that produce 700,000 seedlings annually for student training and research purposes. The University of Idaho Experimental Forest (UIEF), located 25 miles from the Moscow campus, includes over 8,000 acres of forest lands managed by the College.

Other field facilities are the McCall Field Campus located on Payette Lake in the mountains of west-central Idaho, the Taylor Wilderness Research Station in the heart of the Frank Church River-of-No-Return Wilderness, and the Rinker Rock Creek Ranch near Hailey, Idaho.

On campus, the natural resources building incorporates classrooms, laboratories, scientific equipment, plant and animal collections, computer access, and other support functions into an ideal environment for natural resources education and research. The Shattuck Arboretum, with over 60 species of trees, also provides an outdoor classroom for studies in dendrology.

Idaho Forest, Wildlife and Range Experiment Station

Closely tied with the college's graduate programs, the Experiment Station's staff consist of college faculty, full-time research associates and technicians, and graduate student appointees. Staff conduct interdisciplinary research on a wide variety of renewable natural resource management topics in forestry, forest products, range, resource-based recreation, resource-based tourism, wildlife, and fisheries. Funds are provided by the university, Idaho state departments, and federal, state and private grants.

Requirements

General Admission

For a statement of undergraduate and graduate admission requirements, see the admissions (p. 41) portion of the catalog.

Transfer Students

Students who complete a portion of their undergraduate studies elsewhere should follow the U of I curricula for their chosen department and degree as closely as possible. Students whose program does not align closely or who transfer after sophomore year may not be able to graduate in four years. Correspondence with the dean of the college should be initiated at least three months before the student's planned enrollment date.

Undergraduate Program

The first two years provide students with foundational skills in the biological, physical, and social sciences as well as written and oral communication. The college's integrated approach incorporates a common 8-credit set of core courses, including Exploring Natural Resources; Principles of Ecology; and Society and Natural Resources. The curricula of each degree program provide flexibility and individuality by offering many courses and opportunities in common with other programs, all while ensuring that specific professional and educational requirements are met.

Graduate Program

Each department offers research-based thesis and non-thesis tracks. Research is supported by specialized facilities and is organized through the Idaho Forest, Wildlife and Range Experiment Station. Research is also supported by the Idaho Cooperative Fish and Wildlife Research Unit and various state, federal, and private organizations. Assistantships and fellowships are available to assist students. More information on available specializations and current projects can be obtained by contacting the College of Natural Resources or the dean of the College of Graduate Studies.

Internships and Employment

Students in Conservation Biology, Ecology and Ecosystem Sciences, Fishery Sciences, and Wildlife Sciences complete either a senior thesis, senior project, or relevant summer employment as part of their degree requirements.

Requirements College for Graduation

University Requirements

See regulation J (p. 78) for general university requirements for degrees.

College Requirements

The minimum credit requirement for a university baccalaureate degree is 120 credits. A minimum cumulative grade-point average of 2.00 in all courses taken in this college is required for graduation. Courses in the college numbered above 299 are not open to any undergraduate student who is on academic probation.

The college may permit substitutions or grant waivers of specified requirements. Thus, for a student with special aptitudes or interests, a program can be devised that will provide a foundation for advanced study or research or meet other acceptable and well-defined career objectives.

Degrees

The Bachelor of Science (B.S.) is offered in Conservation Biology, Ecology & Ecosystem Science, Environmental Science, Fire Ecology and Management, Fishery Sciences, Forest and Sustainable Products, Forestry, Rangeland Ecology and Management, and Wildlife Sciences.

The Associate of Science (A.S.) is offered in Forest Nursery Management and Technology, Forest Operations and Technology, and Wildland Fuel and Fire Technology.

Undergraduate minors include Aquaculture, Ecology, Environmental Communication, Fire Ecology and Management, Fishery Resources, Forest Operations, Forest Resources, Natural Resource Conservation, Rangeland Ecology and Management, Renewable Materials, and Wildlife Resources.

Graduate degrees include Master of Natural Resources (M.N.R.), Master of Science Natural Resources (M.S.), Master of Science Environmental Science (M.S., thesis and nonthesis options), Joint Master of Science Environmental Science (M.S.) and Juris Doctorate (J.D.), Ph.D. Environmental Science, and Ph.D. Natural Resources.

Program in Environmental Science

Jaap Vos, Director (Water Center 242G; phone 208-885-4595; envs@uidaho.edu; www.uidaho.edu/cnr/departments/

environmental-science-program (<https://www.uidaho.edu/cnr/departments/environmental-science-program/>)).

The interdisciplinary, university-wide program in Environmental Science was established in 1993 and is administered by the College of Natural Resources (p. 388). An Environmental Science degree from the University of Idaho is distinctive because students have access to our iconic outdoor laboratories, field stations, and broad network of faculty and alumni expertise working together to fulfill the UI land grant mission for a sustainable future. Over 80 faculty from across the UI system actively participate in the program.

The Environmental Science program offers B.S., M.S., and Ph.D. degrees that emphasize interdisciplinary scientific approaches for students to study and address environmental issues. The diverse multidisciplinary faculty represents all colleges at the university and includes soil scientists, engineers, writers, geographers, biologists, lawyers, ecologists, political scientists, sociologists, chemists, philosophers, and hydrologists.

Career opportunities in the environmental sciences are diverse and numerous. Our graduates are employed in the private and public sectors in areas such as natural resource management, sustainable community design, pollution prevention, air and water quality monitoring, hazardous waste management, sustainable energy, environmental and land use planning, ecological restoration, environmental policy and governance, environmental remediation, and environmental regulation and compliance.

Students enrolled in the Environmental Science B.S. degree combine study across several disciplines and professional fields to gain an understanding of the complex nature of environmental problems. In addition to studying traditional disciplines, the program creates an integrated and coherent approach to environmental problem solving. All Environmental Science students engage in meaningful field experiences, internships, and service learning projects working independently and in teams. The curriculum fosters cohorts of students to form a supportive learning community. At the B.S. level, five option areas are offered within Environmental Science: Ecological Restoration; Culture and Communication; Policy, Planning and Management; Integrated Sciences; and Sustainability Sciences. The Sustainability Sciences option is designed for online students.

Graduate training in the Environmental Science program includes degree options of M.S. thesis-track, M.S. non-thesis-track, and Ph.D. Modes of study include online and in-person. Admission to the graduate program is based on the ability to complete graduate-level work evidenced by undergraduate transcripts and relevant work experience. In addition, for research-based degrees (M.S. thesis-track and Ph.D.), admission is based on the applicant's statement of research and career objectives; the compatibility of the student's objectives with faculty expertise and program objectives; and availability of graduate faculty to act as major advisor for the applicant. Applicants with backgrounds across a wide array of topics are encouraged due to the interdisciplinary nature of the program. Students without backgrounds in environmental science may be admitted after certain undergraduate deficiencies are completed.

Majors

- Environmental Science (B.S.Env.S.) (p. 390)

Environmental Science Graduate Program

- Environmental Science (M.S.) (p. 398)
- Environmental Science (Ph.D.) (p. 398)
- Concurrent J.D./M.S. Environmental Science Degrees (p. 390)

Concurrent J.D./M.S. Environmental Science Degrees

The concurrent J.D./M.S. degree program offers students an opportunity to combine the study of scientific, social, philosophical, and legal aspects of environmental issues. This program equips students for jobs in which the technical knowledge offered through the Environmental Science Program and the professional expertise provided by the College of Law would be beneficial.

Students must apply separately to and be admitted by the College of Graduate Studies/Environmental Science Program, the College of Law, and the Concurrent J.D./M.S. Degree Program. Admission into the concurrent degree program is dependent on a demonstrated ability to excel in an intense, interdisciplinary educational environment.

Students must complete the requirements set out above for an M.S. degree in environmental science and the requirements for a J.D. (see the College of Law (p. 304) section), subject to the following conditions. The first year of study will be exclusively in the College of Law. Because the concurrent degree program requires an M.S. thesis, the fourth year of the program will be primarily in the Environmental Science Program. Up to 12 hours of M.S. graduate credit will be allowed toward the J.D. degree and up to 6 hours of law credit will be allowed toward the M.S. degree from pre-approved lists of classes. This will permit a student to complete the concurrent degree program in as little as four years. If a student fails to complete the master's degree program, no more than 6 credits will be allowed toward the J.D. degree; if a student fails to complete the law program, the student will be required to satisfy all requirements of the Environmental Science Program before receiving the M.S. degree. See the College of Graduate Studies and the College of Law sections for additional information on the graduate/law concurrent degrees.

Questions regarding the concurrent degree program should be addressed to the Environmental Science Program coordinator (208-885-6113) or to the College of Law (208-885-6423).

Environmental Science (B.S.Env.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)), the general requirements for the B.S. degree, and:

Code	Title	Hours
ENVS 101	Introduction to Environmental Science	3
ENVS 102	Field Activities in Environmental Sciences	1
ENVS 201	Careers in the Environmental Sciences	3
ENVS 300	Environmental Sci Seminar	1
ENVS 498	Internship	1
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Choose one course from the following:		3
ENVS 225	International Environmental Issues Seminar	
AIST 453	Tribal Sovereignty and Federal Policy	
Choose one course from the following:		3-4

ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Choose one course from the following:		3
FOR 375	Fundamentals of Geomatics	
GEOG 385	Foundations of GIS	
Choose one course from the following:		3
GEOL 309	Ground Water Hydrology	
ENVS 448	Drinking Water and Human Health	
ENVS 450	Environmental Hydrology	
FISH 415	Limnology	
FOR 462	Watershed Science and Management	
Choose one course from the following:		4
ENVS 497	Senior Research	
NRS 476	Environmental Project Management and Decision Making	

Emphasis

Select one of the following emphases:		53-68
Ecological Restoration (p.)		
Policy, Planning, and Management (p.)		
Culture and Communication (p.)		
Integrated Sciences (p.)		
Sustainability Sciences (Online only) (p.)		

Total Hours **81-97**

A. Ecological Restoration Emphasis

Code	Title	Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
NRS 310	Social Science Methods	4
PHIL 452	Environmental Philosophy	3
Choose one course from the following:		3
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318/ JAMM 328	Science Writing	
NRS 387	Environmental Communication Skills	
WLF 370	Management and Communication of Scientific Data	
Choose one course from the following:		3
ENGL 322	Climate Change Fiction	
HIST 424	American Environmental History	
Choose one course from the following:		3
GEOG 313	Global Climate Change	
GEOG 435	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
Choose one course from the following:		3
ENVS/NRS 386	Managing Complex Environmental Systems	

GEOG 420	Land, Resources, and Environment	
NRS 235	Society and Natural Resources	
NRS 311	Public Involvement in Natural Resource Management	
SOC 466	Climate Change and Society	
SOC 340	Environmental Sociology and Globalization	
Choose one course from the following:		3
ENVS 479	Introduction to Environmental Regulations	
GEOG 488	Geography of Energy Systems	
NRS/POLS 364	Politics of the Environment	
NRS/POLS 462	Natural Resource Policy	
NRS 488	NEPA in Policy and Practice	
Choose one course from the following:		4
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Choose one sequence from the following:		4-5
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
GEOL 111 & GEOL 101L	Physical Geology for Science Majors and Physical Geology Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Choose one course from the following:		3
FOR 221	Principles of Ecology	
WLF 220	Principles of Ecology	
Choose one course from the following:		3
ENVS 428	Pollution Prevention	
ENVS 429	Environmental Audit	
SOIL 409	Principles of Environmental Toxicology	
GEOL 361	Geology and the Environment	
INDT 364	Hazardous Materials	
Choose one course from the following:		3
BE 433	Bioremediation	
SOIL 422	Environmental Soil Chemistry	
SOIL 452	Environmental Water Quality	
CHE 455	Surfaces and Colloids	
Choose 3 credits from the following:		3
PLSC 419	Plant Community Restoration Methods	
REM 280	Introduction to Wildland Restoration	
REM/NRS 440	Restoration Ecology	
Choose one course from the following:		3
AGEC 477	Law, Ethics, and the Environment	
NRS 311	Public Involvement in Natural Resource Management	
NRS 383	Natural Resource and Ecosystem Service Economics	
Total Hours		58-59

Courses to total 120 credits for this degree

B. Policy Planning and Management

Code	Title	Hours
ENVS/NRS 475	Local and Regional Environmental Planning	3
NRS 235	Society and Natural Resources	3
NRS 310	Social Science Methods	4
NRS 311	Public Involvement in Natural Resource Management	3
NRS/POLS 364	Politics of the Environment	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
NRS 387	Environmental Communication Skills	3
NRS/POLS 462	Natural Resource Policy	3
NRS 476	Environmental Project Management and Decision Making	4
Choose one course sequence from the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
BIOL 114	Organisms and Environments	
Choose one course sequence from the following:		4-5
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & GEOL 101L	Physical Geology for Science Majors and Physical Geology Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Choose one course from the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Choose one course from the following:		3
GEOG 313	Global Climate Change	
FOR 221	Principles of Ecology	
WLF 220	Principles of Ecology	
Choose one course from the following:		3
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318/ JAMM 328	Science Writing	
WLF 370	Management and Communication of Scientific Data	
Choose one course from the following:		3-4
BIOL 314	Ecology and Population Biology	
FIRE 326	Fire Ecology	
NRS/REM 440	Restoration Ecology	
REM 429	Landscape Ecology	
REM 459	Rangeland Ecology	
REM 460	Integrated Field Studies in Rangelands	
WLF 440	Conservation Biology	
Choose one course from the following:		3
AGEC 477	Law, Ethics, and the Environment	

ENVS/NRS 386	Managing Complex Environmental Systems	
IS 322	International Environmental Governance	
Choose one course from the following:		3-4
NRS 472	Remote Sensing of the Environment	
NRS 478	LIDAR and Optical Remote Sensing Analysis	
Total Hours		55-59

Courses to total 120 credits for this degree

C. Culture and Communication

Code	Title	Hours
ENGL 322	Climate Change Fiction	3
ENVS/NRS 386	Managing Complex Environmental Systems	3
NRS 235	Society and Natural Resources	3
PHIL 352	Philosophy, Politics, and Economics	3
HIST 424	American Environmental History	3
PHIL 452	Environmental Philosophy	3
Choose one course sequence from the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
BIOL 114	Organisms and Environments	
Choose one course sequence from the following:		4-5
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & GEOL 101L	Physical Geology for Science Majors and Physical Geology Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Choose one course from the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Choose one course from the following:		3
GEOG 313	Global Climate Change	
FOR 221	Principles of Ecology	
WLF 220	Principles of Ecology	
Choose one course from the following:		3
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318/ JAMM 328	Science Writing	
Choose one course from the following:		3
GEOG 420	Land, Resources, and Environment	
SOC 340	Environmental Sociology and Globalization	
SOC 341	Science, Technology, and Society	
SOC/ANTH 350	Food, Culture, and Society	
Choose one course from the following:		3
PHIL 351	Philosophy of Science	

PHIL 417	Philosophy of Biology	
PHIL 450	Ethics in Science	
Choose one course from the following:		3
NRS/POLS 462	Natural Resource Policy	
POLS/NRS 364	Politics of the Environment	
Choose one course from the following:		3
COMM 410	Conflict Management	
NRS 387	Environmental Communication Skills	
Choose one course from the following:		3
GEOG 435	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
Choose one course from the following:		3
SOC 346	Responding to Risk	
SOC 465	Environmental Justice	
SOC 466	Climate Change and Society	
Total Hours		53-55

Courses to total 120 credits for this degree

D. Integrated Sciences

Code	Title	Hours
NRS 310	Social Science Methods	4
PHIL 452	Environmental Philosophy	3
Choose one course sequence from the following:		3-4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
BIOL 114	Organisms and Environments	
Choose one course sequence from the following:		4-5
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Choose one course from the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Choose one course from the following:		3
FOR 221	Principles of Ecology	
WLF 220	Principles of Ecology	
Choose one course from the following:		3
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318/ JAMM 328	Science Writing	
Choose one course from the following:		3
NRS 387	Environmental Communication Skills	

WLF 370	Management and Communication of Scientific Data	
Choose one course from the following:		3
GEOG 313	Global Climate Change	
GEOG 435	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
Choose one course from the following:		3
ENVS/NRS 386	Managing Complex Environmental Systems	
ENVS 420	Introduction to Bioregional Planning	
ENVS 423	Planning Sustainable Places	
GEOG 420	Land, Resources, and Environment	
NRS 235	Society and Natural Resources	
NRS 311	Public Involvement in Natural Resource Management	
SOC 466	Climate Change and Society	
SOC 465	Environmental Justice	
Choose one course from the following:		3
AGEC 477	Law, Ethics, and the Environment	
NRS/POLS 364	Politics of the Environment	
NRS/POLS 462	Natural Resource Policy	
ENVS 479	Introduction to Environmental Regulations	
GEOG 488	Geography of Energy Systems	
NRS 488	NEPA in Policy and Practice	

Students must also take one additional upper division course across five different topic area bins¹

- Advanced Technical
- Climate Change
- Communication
- Contaminants
- Earth Science
- Ecology
- Economics
- Energy
- Geospatial
- Human Dimensions
- Planning
- Policy
- Sustainability
- Water

Students must also complete one minor, certificate, or accredited semester long academic program.²

Total Hours 59-68

¹ Please contact the department to see a "Class list by Topic" spreadsheet of available courses.

² Please contact the department for approved minors, certificates and academic programs.

Courses to total 120 credits for this degree

E. Sustainability Sciences (Online only)

This option is intended for students at a distance wishing to pursue technically oriented careers in environmental professions such as natural resource management, bioremediation, and environmental impact analysis. Students need to work closely with an academic advisor to plan the courses needed to fulfill degree requirements that are not available through distance delivery.

Code	Title	Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
or PHYS 111	General Physics I	
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
Select one course sequence from the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Choose one course from the following:		4
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Earth Science - Choose one course sequence from the following:		4-5
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Ecology - Choose one course from the following:		3
FOR 221	Principles of Ecology	
WLF 220	Principles of Ecology	
BIOL 314	Ecology and Population Biology	
Writing and Communication - Choose one course from the following:		3
ENGL 316	Environmental Writing	
ENGL 317	Technical Writing II	
ENGL 318/ JAMM 328	Science Writing	
NRS 387	Environmental Communication Skills	
WLF 370	Management and Communication of Scientific Data	
Environmental Ethics and Philosophy:		3
PHIL 452	Environmental Philosophy	

Select five of the following depth areas, and take at least 6 advisor-approved credits within each of the selected depth areas.¹

- a. Mathematics, Physics, and Statistics
- MATH 175 Calculus II
- MATH 275 Calculus III

MATH 310	Ordinary Differential Equations
PHYS 112	General Physics II
or PHYS 212	Engineering Physics II
PHYS 112L	General Physics II Lab
or PHYS 212L	Laboratory Physics II
STAT 301	Probability and Statistics
STAT 431	Statistical Analysis
b. Social Dimensions:	
ARCH 483	Urban Theory and Issues
ENVS 423	Planning Sustainable Places
ENVS 428	Pollution Prevention
ENVS 484	History of Energy
INDT 415	Impact of Technology on Society
FN 450	Global Nutrition
IS 322	International Environmental Governance
NRS 235	Society and Natural Resources
c. Management Tools	
ENVS 415	Environmental Lifecycle Assessment
ENVS 420	Introduction to Bioregional Planning
ENVS 428	Pollution Prevention
ENVS 430	Planning Theory and Process
INDT 364	Hazardous Materials
INDT 448	Project and Program Management
d. Geospatial Tools:	
GEOG 385	Foundations of GIS
GEOG 424	Hydrologic Applications of GIS and Remote Sensing
GEOG 475	Intermediate GIS
GEOG 483	Remote Sensing IMAGE ANALYSIS/GIS Integration
NRS/FOR 472	Remote Sensing of the Environment
NRS 478	LIDAR and Optical Remote Sensing Analysis
FIRE 407	GIS Application in Fire Ecology and Management
e. Environmental Policy and Regulations:	
AGEC 477	Law, Ethics, and the Environment
ENVS 429	Environmental Audit
ENVS 436	Principles of Sustainability
ENVS 479	Introduction to Environmental Regulations
NRS 488	NEPA in Policy and Practice
POLS/NRS 462	Natural Resource Policy
f. Energy Systems:	
ARCH 463	Environmental Control Systems I
ARCH 464	Environmental Control Systems II
ENGR 320	Engineering Thermodynamics and Heat Transfer
ENVS 484	History of Energy
ENVS 485	Energy Efficiency and Conservation
GEOG 435	Climate Change Mitigation
INDT 415	Impact of Technology on Society
INDT 434	Power Generation and Distribution
g. Sustainability Science:	
ENVS 420	Introduction to Bioregional Planning
ENVS 415	Environmental Lifecycle Assessment

ENVS 423	Planning Sustainable Places
ENVS 428	Pollution Prevention
FOR 443	Forest Production Ecology
ENVS 436	Principles of Sustainability
SOIL 409	Principles of Environmental Toxicology
GEOG 313	Global Climate Change
INDT 419	Industrial Sustainability Analysis
INDT 457	Lean to Green Sustainable Technology
h. Water and Soils:	
CHE 455	Surfaces and Colloids
SOIL 452	Environmental Water Quality
ENVS 450	Environmental Hydrology
FISH 415	Limnology
SOIL 205	The Soil Ecosystem
SOIL 438	Pesticides in the Environment
SOIL 446	Soil Fertility
i. Restoration and Remediation:	
BE 433	Bioremediation
PLSC 419	Plant Community Restoration Methods
REM 280	Introduction to Wildland Restoration
REM 410	Principles of Vegetation Monitoring and Measurement
REM/NRS 440	Restoration Ecology
SOIL 422	Environmental Soil Chemistry
SOIL 452	Environmental Water Quality
WLF 440	Conservation Biology

Total Hours **67-68**

1

Courses listed more than once cannot double count across depth areas.

Courses to total 120 credits for this degree.

Ecological Restoration Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
ENVS 101	Introduction to Environmental Science	3
ENVS 102	Field Activities in Environmental Sciences	1
MATH 143	College Algebra	3
Oral Communication Course		3
Social and Behavioral Ways of Knowing		3
Hours		16
Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
ENVS 201	Careers in the Environmental Sciences	3
MATH 160 OR MATH 170		4
Elective Course		1
Hours		15
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
STAT 251 OR STAT 301		3
(GEOG 100 AND GEOG 100L) OR (GEOL 111 AND GEOL 101L) OR (SOIL 205 AND SOIL 206)		4

ECON 202 OR ECON 272	3
Hours	14
Spring Term 2	
CHEM 112 General Chemistry II	4
CHEM 112L General Chemistry II Laboratory	1
ENVS 300 Environmental Sci Seminar	1
ENVS 225 OR AIST 453	3
FOR 221 OR WLF 220	3
Humanistic and Artistic Ways of Knowing	3
Hours	15
Fall Term 3	
NRS 310 Social Science Methods	4
PHIL 452 Environmental Philosophy	3
ENVS 225 OR AIST 453	3
ENGL 322 OR HIST 424	3
REM 280 OR REM 440	3
Hours	16
Spring Term 3	
ENGL 316 OR ENGL 317 OR ENGL 318 OR NRS 387 OR WLF 370	3
ENVS 386 OR GEOG 420 OR NRS 235 OR NRS 311 OR SOC 466 OR SOC 340	3
ENVS 428 OR ENVS 429 OR SOIL 409 OR GEOL 361 OR INDT 364	3
American Diversity Course	3
Humanistic and Artistic Ways of Knowing Course	3
Hours	15
Fall Term 4	
ENVS 497 OR NRS 476	2
GEOG 313 OR GEOG 435 OR GEOG 455	3
GEOL 309 OR ENVS 450 OR FISH 415 OR FOR 462	3
AGEC 477 OR NRS 311 OR NRS 383	3
American Diversity Course	3
Hours	14
Spring Term 4	
ENVS 498 Internship	1
ENVS 497 OR NRS 476	2
ENVS 479 OR GEOG 488 OR NRS 364 OR NRS 462 OR NRS 488	3
BE 433 OR CHE 455 OR SOIL 422 OR SOIL 452	3
International Course	3
Elective Course	3
Hours	15
Total Hours	120

Policy, Planning, and Management Emphasis

Fall Term 1		Hours
ENGL 101 Writing and Rhetoric I	3	
ENVS 101 Introduction to Environmental Science	3	
ENVS 102 Field Activities in Environmental Sciences	1	
MATH 143 OR MATH 160 OR MATH 170	3	
Oral Communication Course	3	
Humanistic and Artistic Ways of Knowing	3	
Hours	16	
Spring Term 1		
ENGL 102 Writing and Rhetoric II	3	
ENVS 201 Careers in the Environmental Sciences	3	
NRS 235 Society and Natural Resources	3	
BIOL 114 OR (CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)	4	
Social and Behavioral Ways of Knowing	3	
Hours	16	
Fall Term 2		
ECON 202 OR ECON 272	3	
STAT 251 OR STAT 301	3	
American Diversity Course	3	

Elective Course	3
Hours	15
Spring Term 2	
ENVS 300 Environmental Sci Seminar	1
ENVS 225 OR AIST 453	3
(GEOG 100 AND GEOG 100L) OR (GEOL 101 AND GEOL 101L) OR (GEOL 111 AND GEOL 101L) OR (SOIL 205 AND SOIL 206)	4
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
Hours	14
Fall Term 3	
NRS 310 Social Science Methods	4
NRS 462 OR POLS 462	3
GEOG 313 OR FOR 221 OR WLF 220	3
International Course	3
Elective Course	2
Hours	15
Spring Term 3	
NRS 311 Public Involvement in Natural Resource Management	3
ENGL 316 OR ENGL 317 OR ENGL 318 OR WLF 370	3
Upper Division Ecology, Major Elective Course	3
Elective Course	3
Elective Course	3
Hours	15
Fall Term 4	
ENVS 497 OR NRS 476	2
GEOL 309 OR ENVS 450 OR FISH 415 OR FOR 462	3
ENVS 475 OR NRS 475	3
AGEC 477 OR ENVS 386 OR NRS 386 OR IS 322	3
Elective Course	3
Hours	14
Spring Term 4	
ENVS 498 Internship	1
NRS 476 Environmental Project Management and Decision Making	4
ENVS 497 OR NRS 476	2
NRS 472 OR NRS 478	3
Elective Course	3
Elective Course	2
Hours	15
Total Hours	120

Culture and Communication Emphasis

Fall Term 1		Hours
ENGL 101 Writing and Rhetoric I	3	
ENVS 101 Introduction to Environmental Science	3	
ENVS 102 Field Activities in Environmental Sciences	1	
MATH 143 OR MATH 160 OR MATH 170	3	
Oral Communication Course	3	
Humanistic and Artistic Ways of Knowing Course	3	
Hours	16	
Spring Term 1		
ENGL 102 Writing and Rhetoric II	3	
ENVS 201 Careers in the Environmental Sciences	3	
NRS 235 Society and Natural Resources	3	
BIOL 114 OR (CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)	4	
Elective Course	2	
Hours	15	
Fall Term 2		
STAT 251 OR STAT 301	3	

ECON 202 OR ECON 272	3
American Diversity Course	3
Humanistic and Artistic Ways of Knowing Course	3
Technical Elective, Major Elective Course	3
Hours	15
Spring Term 2	
ENVS 300 Environmental Sci Seminar	1
PHIL 352 Philosophy, Politics, and Economics	3
ENVS 225 OR AIST 453	3
(GEOG 100 AND GEOG 100L) OR (GEOL 101 AND GEOL 101L) OR (GEOL 111 AND GEOL 111L) OR (SOIL 205 AND SOIL 206)	4
International Course	3
Hours	14
Fall Term 3	
PHIL 452 Environmental Philosophy	3
GEOG 313 OR FOR 221 OR WLF 220	3
ENGL 316 OR ENGL 317 OR ENGL 318	3
SOC 342 OR SOC 346 OR SOC 465 OR SOC 466	3
Elective Course	3
Hours	15
Spring Term 3	
HIST 424 American Environmental History	3
ENGL 322 Climate Change Fiction	3
ENVS 386 OR NRS 386	3
GEOG 420 OR SOC 340 OR SOC 341 OR SOC 350	3
Physical Science Area Elective, Major Elective Course	3
Hours	15
Fall Term 4	
ENVS 497 OR NRS 476	2
GEOL 309 OR ENVS 450 OR FISH 415 OR FOR 462	3
PHIL 351 OR PHIL 417 OR PHIL 450	3
COMM 410 OR NRS 387	3
Physical Science Area Elective, Major Elective Course	3
Elective Course	1
Hours	15
Spring Term 4	
ENVS 498 Internship	1
ENVS 497 OR NRS 476	2
NRS 462 OR NRS 364	3
GEOG 435 OR GEOG 455	3
Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

Integrated Sciences Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
ENVS 101	Introduction to Environmental Science	3
ENVS 102	Field Activities in Environmental Sciences	1
MATH 143 OR MATH 160 OR MATH 170		3
Oral Communication Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		16
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
ENVS 201	Careers in the Environmental Sciences	3
BIOL 114 OR (CHEM 101 AND CHEM 101L) OR (CHEM 111 OR CHEM 111L)		4
International Course		3
Elective Course		2
Hours		15

Fall Term 2	
STAT 251 OR STAT 301	3
(GEOG 100 OR GEOG 100L) OR (GEOL 101 AND GEOL 101L) OR (GEOL 111 OR GEOL 111L) OR (SOIL 205 AND SOIL 206)	4
FOR 221 OR WLF 220	3
ECON 202 OR ECON 272	3
Humanistic and Artistic Ways of Knowing Course	3
Hours	16
Spring Term 2	
ENVS 300 Environmental Sci Seminar	1
ENVS 225 OR AIST 453	3
Minor/Certificate/Program Elective, Major Elective Course	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3
Hours	13
Fall Term 3	
PHIL 452 Environmental Philosophy	3
NRS 310 Social Science Methods	4
ENVS 386 OR ENVS 420 OR ENVS 423 OR GEOG 420 OR NRS 235 OR NRS 311 OR SOC 466 OR SOC 465	3
Topic Area Elective, Major Elective Course	3
Minor/Certificate/Program Elective, Major Elective Course	3
Hours	16
Spring Term 3	
ENGL 316 OR ENGL 317 OR ENGL 318 OR NRS 387 OR WLF 370	3
GEOG 313 OR GEOG 435 OR GEOG 455	3
GEOL 309 OR ENVS 450 OR FISH 415 OR FOR 462	3
Topic Area Elective, Major Elective Courses	3
Topic Area Elective, Major Elective Courses	3
Hours	15
Fall Term 4	
ENVS 497 Senior Research	2
AGEC 477 OR NRS 364 OR NRS 462 OR POLS 364 OR POLS 462 OR ENVS 479 OR GEOG 488 OR NRS 488	3
Topic Area Elective, Major Elective Course	3
Minor/Certificate/Program Elective, Major Elective Course	3
Minor/Certificate/Program Elective, Major Elective Course	3
Hours	14
Spring Term 4	
ENVS 497 Senior Research	2
ENVS 498 Internship	1
American Diversity Course	3
Topic Area Elective, Major Elective Course	3
Minor/Certificate/Program Elective, Major Elective Course	3
Minor/Certificate/Program Elective, Major Elective Course	3
Hours	15
Total Hours	120

Sustainability Sciences Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
ENVS 101	Introduction to Environmental Science	3
ENVS 102	Field Activities in Environmental Sciences	1
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
Social and Behavioral Ways of Knowing Course		3
Hours		14
Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
ENVS 201	Careers in the Environmental Sciences	3

MATH 160 OR MATH 170		4
Oral Communication Course		3
Hours		17
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ECON 202 OR ECON 272		3
STAT 251 OR STAT 301		3
(GEOG 100 AND GEOG 100L) OR (GEOL 111 AND GEOL 101L) OR (SOIL 205 AND SOIL 206)		4
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Spring Term 2		
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
ENVS 300	Environmental Sci Seminar	1
ENVS 225 OR AIST 453		3
American Diversity Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Fall Term 3		
PHIL 452	Environmental Philosophy	3
BIOL 250 OR PHYS 111		3
FOR 221 OR WLF 220 OR BIOL 314		3
Depth Elective, Major Elective Course		3
Depth Elective, Major Elective Course		3
Hours		15
Spring Term 3		
ENGL 316 OR ENGL 317 OR ENGL 318 OR NRS 387 OR WLF 370		3
(PHYS 111 AND PHYS 111L) OR (PHYS 112 OR PHYS 112L)		4
Depth Elective, Major Elective Course		3
Depth Elective, Major Elective Course		3
Hours		13
Fall Term 4		
ENVS 497	Senior Research	2
GEOL 309 OR ENVS 450 OR FISH 415 OR FOR 462		3
Depth Elective, Major Elective Course		3
Depth Elective, Major Elective Course		3
Depth Elective, Major Elective Course		3
Hours		14
Spring Term 4		
ENVS 497	Senior Research	2
ENVS 498	Internship	1
International Course		3
Depth Elective, Major Elective Course		3
Depth Elective, Major Elective Course		3
Depth Elective, Major Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript, and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Ecological Restoration Emphasis

1. Students will be able to apply environmental science principles in biophysical and social science contexts to address societally relevant issues in environmental science, management, and mitigation.
2. Students will be able to communicate environmental science, management, and mitigation principles and applications effectively through writing, oral, and graphical presentations.
3. Students will be able to demonstrate integrative environmental research and/or problem solving expertise that applies the scientific method for design, data collection, analysis, and reporting.
4. Students will be able to demonstrate how core ecological principles are used to implement effective scientific approaches to environmental restoration and remediation.

Policy, Planning, and Management Emphasis

1. Students will be able to apply environmental science principles in biophysical and social science contexts to address societally relevant issues in environmental science, management, and mitigation.
2. Students will be able to communicate environmental science, management, and mitigation principles and applications effectively through writing, oral, and graphical presentations.
3. Students will be able to demonstrate integrative environmental research and/or problem solving expertise that applies the scientific method for design, data collection, analysis, and reporting.
4. Students will be able to demonstrate how core principles of policy and planning work within societal frameworks to complement and advance management decisions in the field of environmental science.

Culture and Communication Emphasis

1. Students will be able to apply environmental science principles in biophysical and social science contexts to address societally relevant issues in environmental science, management, and mitigation.
2. Students will be able to communicate environmental science, management, and mitigation principles and applications effectively through writing, oral, and graphical presentations.
3. Students will be able to demonstrate integrative environmental research and/or problem solving expertise that applies the scientific method for design, data collection, analysis, and reporting.
4. Students will be able to demonstrate how and why cultural influences can affect societal decisions regarding key issues of environmental science.

Integrated Sciences Emphasis

1. Students will be able to apply environmental science principles in biophysical and social science contexts to address societally relevant issues in environmental science, management, and mitigation.
2. Students will be able to communicate environmental science, management, and mitigation principles and applications effectively through writing, oral, and graphical presentations.
3. Students will be able to demonstrate integrative environmental research and/or problem solving expertise that applies the scientific method for design, data collection, analysis, and reporting.
4. Students will be able to integrate biophysical expertise with socio-cultural dimensions of environmental problem-solving.

Sustainability Sciences Emphasis

1. Students will be able to apply environmental science principles in biophysical and social science contexts to address societally relevant issues in environmental science, management, and mitigation.

2. Students will be able to communicate environmental science, management, and mitigation principles and applications effectively through writing, oral, and graphical presentations.
3. Students will be able to demonstrate integrative environmental research and/or problem solving expertise that applies the scientific method for design, data collection, analysis, and reporting.
4. Students will be able to demonstrate how and why fundamentals of biophysical and social science contribute to environmental sustainability at the local, national, and international level.

Environmental Science (M.S.)

This interdisciplinary degree is structured around biological science, physical science, and social sciences, allowing for breadth and specialization within these disciplines.

The master's student develops a graduate program of at least 30 semester hours in consultation with their major professor and supervisory committee. The student is expected to actively participate in one or more seminar presentations during their degree.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the Master's in Environmental Science degree.

Master of Science. Major in Environmental Science.

Each student will design a study plan in consultation with an advisor. The study plan is subject to approval by the director and the Graduate College.

There are five requirements for the M.S. in Environmental Science:

1. Depth requirement: the graduate program is structured around three option areas: biological science, physical science, or social science. A student must complete a minimum of 12 credits (thesis degree) or 15 credits (non-thesis degree) in one of the three option areas;
2. Breadth requirement: A student must complete a minimum of 3 credits at the 500-level in each of the other two option areas;
3. A student must complete one course (3 credits) in appropriate research methods or statistics at the 500-level;
4. A student must complete ENVS 501 (2 credits); and
5. A student must complete ENVS 500 (6 credits, thesis degree) or ENVS 599 (3 credits, non-thesis degree).

These requirements may be augmented to compensate for undergraduate deficiencies.

The thesis degree consists of at least 30 graduate credits, including at least 6 credits and a maximum of 10 credits of thesis and a minimum of 24 credits of coursework. For the thesis option, at least 21 credits in the option and supporting area must be at the 500-level, including a minimum of 6 hours of ENVS 500 (Master's Research and Thesis).

The non-thesis option requires at least 30 graduate credits, including a minimum of 3 credits of ENVS 599 (Non-thesis Master's Research) and 27 credits of course work. For the non-thesis option, at least 21 credits in the option and supporting area must be at the 500-level.

For both thesis and non-thesis options, a student can take up to 9 credits at the 400-level in the option and supporting area (one class can be at the 300-level in a supporting area, with committee approval). The thesis or non-thesis research part of the program for each student consists of a substantial project in which the student demonstrates the ability to do rigorous independent work.

1. Student will be able to demonstrate advanced skill to design interdisciplinary research and analysis for environmental problem-solving.
2. Student will be able to apply mastery of key principles and core concepts in environmental science with a depth of knowledge in either physical, biological, or social sciences.
3. Student will be able to collaborate with a faculty advisor and graduate committee to implement interdisciplinary research.
4. Student will be able to communicate effectively, professionally, and within group settings.

Environmental Science (Ph.D.)

Doctor of Philosophy. Major in Environmental Science.

Admission to the doctoral program is based on the compatibility of the student's research interests with those of the major professor, the availability of research support, and the student's academic record and potential. Applicants are expected to have the prerequisites as specified for the M.S. degree. The student develops a graduate program of at least 78 semester hours in consultation with their major professor and supervisory committee. The student is expected to actively participate in one or more seminar presentations during the course of their graduate career. Teaching experience is required and is obtained through participation in the program's course offerings. Qualifying examinations are required for those students entering the Ph.D. program without a master's degree. Preliminary examinations are required prior to admission to final candidacy for the degree. All candidates prepare a formal dissertation reflecting original thought and independent investigation and defend it during an oral presentation as a final step toward their degree. Publication in the peer-reviewed, scientific literature is expected. Contact the program office for specific program requirements and procedures.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the PhD in Environmental Science degree.

1. Student will be able to collaborate with a faculty advisor and graduate committee to implement innovative and novel interdisciplinary scholarship.
2. Student will be able to demonstrate advanced and independent mastery of key principles and core concepts in environmental science with a depth of knowledge in either physical, biological, or social sciences.
3. Student will be able to think critically and apply analytical frameworks to understand the cultural, social, political, and economic ramifications of environmental problem-solving.

4. Student will be able to demonstrate advanced effectiveness and professionalism in communications as an individual and within team settings.

Department of Fish and Wildlife Sciences

Janet Rachlow, Dept. Head (105B CNR Bldg. 83844-1136; phone 208-885-6434; fws@uidaho.edu).

Fish and wildlife science professionals apply the principles of biology and ecology to understand how fish and wildlife populations interact with each other and with their environment. We help students develop a solid foundation in fish and wildlife biology and ecology, a strong scientific and quantitative background, appropriate technical expertise, and an appreciation for fish and wildlife as a public trust resource. Our degrees emphasize critical thinking through coursework and hands-on field and laboratory experiences, and our graduates are equipped to be successful natural resource managers and scientists in a rapidly changing world.

There are four areas of emphasis within the department: aquaculture, fisheries ecology and management, wildlife ecology and management, and conservation biology. Bachelor of Science degrees are offered in Fisheries Science, Wildlife Sciences, and Conservation Biology.

Fishery professionals conduct research or apply management principles to aquatic ecosystems. They may become involved with managing recreationally and commercially important fish populations, biological monitoring, environmental impact assessment, conservation of endangered fish, hatchery operation, commercial fish farming, control and prevention of fish diseases, or management of stream or lake ecosystems.

Wildlife professionals are involved in the conservation and management of game and nongame wildlife species. This includes studying wildlife and their habitat to provide a biological basis for management programs. Wildlife professionals often coordinate wildlife management programs with other natural resource activities such as forest management, range management, and land use planning.

Conservation biology professionals use the tools and basic principles of ecology (such as population dynamics and genetics) in combination with social science principles to solve critical issues related to conserving species and ecosystems. They write species recovery plans, manage parks and protected areas, and advise policy makers and land-use planners.

Professions in Fish and Wildlife Sciences and Conservation Biology also include opportunities in law enforcement, environmental education, and public relations.

In the Fisheries Science degree, students may design a program that emphasizes fisheries management, fisheries ecology, aquatic ecology, or aquaculture. In the Wildlife Sciences degree, the program emphasizes the principles of wildlife ecology, population dynamics, and management. Elective courses in all programs provide an opportunity to gain additional knowledge in a special area of interest or to broaden into other fields. To ensure that students gain practical experience, Fisheries Science and Wildlife Sciences students are required to complete an internship, whereas Conservation Biology students are required to complete a senior thesis or project.

Our graduates find employment with numerous federal and state agencies, educational institutions, and the private sector. These include

the U.S. Fish and Wildlife Service, the Bureau of Land Management, the U.S. Forest Service, the National Marine Fisheries Service, the U.S. Army Corps of Engineers, Department of Environmental Quality, state fish and game or conservation departments, tribal agencies, and private organizations such as power companies, commercial fish growers, consulting agencies, and non-profit organizations. Recent surveys have shown that baccalaureate graduates from the department obtain employment at a rate considerably above the national average.

The graduate program is offered to meet the needs of students who are interested in either specialized or generalized advanced study. Because specific requirements for each degree are determined by the student's supervisory committee, individual study plans allow for differences in preparation while providing all students with a comparable background by the time the graduate program is completed.

In addition to the admission requirements of the College of Graduate Studies, the prospective student should have maintained a cumulative grade-point average of at least 3.00 (on a 4.00 scale) during the undergraduate program. Acceptance of students who do not have this minimum grade-point average or other stated requirements is possible, subject to recommendation by the department head and approval of the College of Graduate Studies. At least one summer's experience with a natural resource agency or research group is strongly recommended.

The graduate program in fishery sciences is oriented toward the applied and basic aspects of fishery management, aquatic ecology, and fish health management. The fishery management area includes a focus on fish population dynamics and analysis, management systems, and environmental stresses; the aquatic ecology area includes limnology and habitat management; and the fish health management area includes finfish culture (cold water and warm water), fish disease diagnostics and epidemiology, and fish physiology. The USGS Cooperative Fish and Wildlife Research Unit and the Aquaculture Research Institute also provide important opportunities for graduate studies in fishery resources and aquaculture.

Students planning to begin graduate studies in fishery sciences should have a broad background in the life sciences with specific emphasis on courses in the fishery sciences. They should also have a background in quantitative data processing and professional communication, both oral and written.

Admission to the graduate program in wildlife sciences requires an undergraduate degree with a major in wildlife resources or a closely related field emphasizing the principles of wildlife ecology, population dynamics, and management. Students with differing backgrounds are also admitted if they have substantial preparation in the biological and physical sciences. Candidates must fulfill entrance requirements of the Graduate College and of the Department of Fish and Wildlife Sciences.

Graduate work in wildlife sciences offers students the opportunity to do research in one of several areas including wildlife ecology and behavior, predator ecology, population dynamics, wildlife habitat relationships, conservation biology, conservation genetics as well as management of game and nongame species. Students are encouraged to select topics that will benefit wildlife conservation and management at the state, national, or international level. Graduate projects in wildlife resources may be developed in cooperation with the USGS Cooperative Fish and Wildlife Research Unit, an active participant in the department and research program of the college.

In addition to the requirements listed above, graduate admission is based on the compatibility of the student's research interests with the areas of concentration in the department and the availability of research faculty.

Our research mission is to conduct novel research that helps our partners manage fish and wildlife populations and their ecosystems in complex and continually changing biological, social, economic, and political landscapes. We support economic enhancement through research and development of methods and approaches for improved and sustainable resource use. We provide natural resource professionals and the general public with current scientific information relevant to policy and management.

For additional information, please call the department at 208-885-6434 or visit the website at <http://www.uidaho.edu/cnr/departments/fish-and-wildlife-sciences> (<http://www.uidaho.edu/cnr/departments/fish-and-wildlife-sciences/>).

Majors

- Fisheries Science (B.S.) (p. 403)
- Conservation Biology (B.S.) (p. 400)
- Wildlife Sciences (B.S.) (p. 408)

Minors

- Aquaculture Minor (p. 400)
- Fishery Sciences Minor (p. 407)
- Wildlife Sciences Minor (p. 407)

Certificates

- Tribal Natural Resources Stewardship Undergraduate Certificate (p. 407)

Fish and Wildlife Sciences Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Fish and Wildlife Sciences. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Fish and Wildlife Science (M.S.) (p. 402)
- Natural Resources (Ph.D.) (p. 435)

Aquaculture Minor

Code	Title	Hours
FISH 411	Fish Physiology	2
FISH 422	Concepts in Aquaculture	4
FISH 424	Fish Health Management	4
FISH 481	Ichthyology	4
Select one course from the following:		3-4
AVS 305	Animal Nutrition	
BIOL 310	Genetics	
Select two courses from the following:		6-7
AGEC 278	Farm and Agribusiness Management	
ASM 107	Beginning Welding	
AVS 305	Animal Nutrition	

BIOL 250	General Microbiology
ENTR 414	Entrepreneurship
FISH 498	Internship
MKTG 321	Marketing

Total Hours **23-25**

Courses to total 23 credits for this minor

Conservation Biology (B.S.)

The program requires 120 credits. Students pursuing a B.S. in Conservation Biology must receive a grade of 'C' or better in each of the following 4 indicator courses to register in upper division courses in NRS/FISH/FOR/REM/WLF: BIOL 114, BIOL 213, FOR 221 or WLF 220, NR 321, and STAT 251.

Students must achieve a 'C' or better to graduate in the following seven core courses: BIOL 421, NR 200, PHIL 452, REM 429, WLF 440, and WLF 448.

Before students are allowed to begin their senior thesis or project (NRS 485 or NRS 497), they must attend two thesis/project sessions and one senior poster presentation.

Required coursework includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Structure and Function Across the Tree of Life	4
BIOL 310	Genetics	3
or GENE 314	General Genetics	
BIOL 421	Advanced Evolution/Population Dynamics	3
COMM 101	Fundamentals of Oral Communication	3
ECON 202	Principles of Microeconomics	3-4
or ECON 272	Foundations of Economic Analysis	
ENGL 317	Technical Writing II	3
or WLF 370	Management and Communication of Scientific Data	
or JAMM 328	Science Writing	
FOR 220	Forest Biology & Dendrology	3
or REM 341	Systematic Botany	
FOR 235	Society and Natural Resources	3
FOR 375	Fundamentals of Geomatics	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
NR 101	Exploring Natural Resources	2
NR 200	Seminar	1-16
NR 300	Ecology and Conservation Biology Thesis Seminar	1
NRS 383	Natural Resource and Ecosystem Service Economics	3
PHIL 452	Environmental Philosophy	3
REM 429	Landscape Ecology	3
STAT 251	Statistical Methods	3
WLF 440	Conservation Biology	3
WLF 448	Fish and Wildlife Population Ecology	4

Select one of the following: 3-4

BIOL 314	Ecology and Population Biology
FOR 221/ WLF 220	Principles of Ecology
NR 321	Ecology

Select one of the following: 4

CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory

Select one of the following: 1

FISH 473	ECB Senior Presentation
FOR 473	ECB Senior Presentation
FSP 473	ECB Senior Presentation
NRS 473	ECB Senior Presentation
REM 473	ECB Senior Presentation
WLF 473	ECB Senior Presentation

Select one of the following: 3

FISH 497	Senior Thesis (Max 6 credits)
FOR 497	Senior Thesis (Max 6 credits)
NR 497	Senior Thesis (Max 3 credits)
REM 497	Senior Research and Thesis
WLF 497	Senior Thesis (Max 6 credits)

Select one Quantitative Resource Analysis Restricted elective from the following: 2-4

ANTH 417	Social Data Analysis
FOR 472	Remote Sensing of the Environment
GEOG 385	Foundations of GIS
NRS 310	Social Science Methods
REM 410	Principles of Vegetation Monitoring and Measurement ¹
REM 411	Wildland Habitat Ecology and Assessment ¹
STAT 422	Survey Sampling Methods
STAT 431	Statistical Analysis

Select one Resource Management Restricted elective from the following: 3-4

FISH 418	Fisheries Management
FOR 410	Fire Effects and Management
FOR 424	Silviculture Principles and Practices
FOR 462	Watershed Science and Management
NRS 386	Managing Complex Environmental Systems
NRS 476	Environmental Project Management and Decision Making
NRS 490	Wilderness and Protected Area Management
PLSC 419	Plant Community Restoration Methods
REM 480	Ecological Restoration
REM 456	Integrated Rangeland Management
WLF 492	Wildlife Management

Select 6 credits of Ecology Restricted electives from the following:² 6

BIOL 478	Animal Behavior
ENT 469	Introduction to Forest Insects
FISH 314	Fish Ecology
FISH 315	Fish Ecology Field Techniques and Methods

FISH 415	Limnology
FISH 430	Riparian and River Ecology
FISH 450	Ecology & Conservation of Freshwater Invertebrates
FISH 451	Freshwater Invertebrate Field Methods
FOR 330	Terrestrial Ecosystem Ecology
FIRE 326	Fire Ecology
FOR 462	Watershed Science and Management
GEOG 410	Biogeography
GEOG 430	Climate Change Ecology
PLSC 410	Invasive Plant Biology
REM 440	Restoration Ecology
REM 459	Rangeland Ecology
REM 460	Integrated Field Studies in Rangelands
WLF 314	Ecology of Terrestrial Vertebrates
WLF 315	Techniques Laboratory

Select one Organismal Biology Restricted elective from the following: 3-4

BIOL 483	Mammalogy
BIOL 489	Herpetology
FISH 481	Ichthyology
WLF 482	Ornithology

Select two Social/Political Restricted electives from the following: 4-6

AIST 445	Indigenous Ways of Knowing
SOC 465	Environmental Justice
COMM 410	Conflict Management
ENVS 225	International Environmental Issues Seminar
FOR 310	Indigenous Culture and Ecology
ENVS 436	Principles of Sustainability
FOR 484	Forest Policy and Administration
GEOG 420	Land, Resources, and Environment
HIST 424	American Environmental History
IS 322	International Environmental Governance
NRS 386	Managing Complex Environmental Systems
NRS 387	Environmental Communication Skills
NRS 462	Natural Resource Policy
NRS 311	Public Involvement in Natural Resource Management
POLS 364	Politics of the Environment

Total Hours 92-115

1

Both REM 410 (<https://catalog.uidaho.edu/search/?P=REM%20410>) and REM 411 (<https://catalog.uidaho.edu/search/?P=REM%20411>) must be completed to satisfy Quantitative Resource Analysis Restricted Elective requirement.

2

At least 2 credits from FISH 315, FISH 415, FISH 430, FISH 451, REM 460, and/or WLF 315.

Courses to total 120 credits for this degree

Fall Term 1		Hours
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3

NR 101	Exploring Natural Resources	2
Elective Course		1
Hours		13
Spring Term 1		
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
NR 200	Seminar	1
MATH 160 OR MATH 170		4
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		15
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
FOR 235	Society and Natural Resources	3
STAT 251	Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course		3
ECON 202 OR ECON 272		3
Hours		16
Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
FOR 375	Fundamentals of Geomatics	3
NR 300	Ecology and Conservation Biology Thesis Seminar	1
BIOL 314 OR FOR 221 OR NR 321 OR WLF 220		3
BIOL 310 OR GENE 314		3
Hours		14
Fall Term 3		
PHIL 452	Environmental Philosophy	3
WLF 440	Conservation Biology	3
ENGL 317 OR WLF 370		3
FOR 220 OR REM 341		3
FOR 472 OR GEOG 385 OR NRS 310 OR REM 410 OR REM 411 OR STAT 422 OR STAT 431		3
Hours		15
Spring Term 3		
BIOL 421	Advanced Evolution/Population Dynamics	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
WLF 448	Fish and Wildlife Population Ecology	4
BIOL 478 OR ENT 469 OR FISH 314 OR FISH 315 OR FISH 415 OR FISH 430 OR FIRE 326 OR FOR 330 OR FOR 468 OR GEOG 410 OR PLSC 410 OR REM 440 OR REM 459 OR REM 460 OR WLF 314 OR WLF 315		3
COMM 410 OR ENVS 225 OR FOR 484 OR GEOG 420 OR HIST 424 OR NRS 311 OR NRS 386 OR NRS 387 OR NRS 462 OR POLS 364		3
Hours		16
Fall Term 4		
American Diversity Course		3
International Course		3
FISH 497 OR FOR 497 OR NR 497 OR REM 497 OR WLF 497		3
FISH 418 OR FOR 424 OR FOR 462 OR NRS 386 OR NRS 490 OR REM 456 OR WLF 492		3
BIOL 483 OR BIOL 489 OR FISH 481 OR WLF 482		3
Hours		15
Spring Term 4		
REM 429	Landscape Ecology	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
FISH 473 OR FOR 473 OR NRS 473 OR REM 473 OR WLF 473		1
BIOL 478 OR ENT 469 OR FISH 314 OR FISH 315 OR FISH 415 OR FISH 430 OR FIRE 326 OR FOR 330 OR FOR 468 OR GEOG 410 OR PLSC 410 OR REM 440 OR REM 459 OR REM 460 OR WLF 314 OR WLF 315		3

COMM 410 OR ENVS 225 OR FOR 484 OR GEOG 420 OR HIST 424 OR NRS 311 OR NRS 386 OR NRS 387 OR NRS 462 OR POLS 364	3
Hours	16
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Conservation Biology

1. Articulate disciplinary identity: Students will convey an accurate and nuanced understanding of the unique history and character of the discipline of Conservation Biology and its distinctiveness from related disciplines, as well as their own personal rationale for matriculating within the discipline.

2. Understand principles and theories:

a. Students will accurately articulate key principles concerning the ecology of species, populations, communities, ecosystems, and landscapes.

b. Students will demonstrate an understanding of the interconnection between ecological systems and basic aspects of human ecology (as defined by economics, social sciences, and other related fields).

3. Locate, organize, analyze, and critically evaluate information.

a. Students will demonstrate the ability to locate pertinent ecological, social, economic and political information.

b. Students will organize, analyze, and critically evaluate information using professional, discipline-appropriate standards

4. Effectively communicate ideas and technical knowledge:

Students will effectively utilize diverse forms of communication (written oral, visual) to convey information to scientific and nonscientific audiences in formal and professional formats.

5. Work collaboratively

Students will practice effective team management and participatory skills (in disciplinary and interdisciplinary team settings) to evaluate complex situations and formulate solutions to basic problems

6. Practice ethical behavior

Students will adhere to professional standards of ethics when using or synthesizing knowledge, doing research, employing field practices, engaging in conservation management, and when working with stakeholders.

Fish and Wildlife Science (M.S.)

Master of Science. Major in Natural Resources.

The M.S. degree with major study in either fishery resources or wildlife resources is awarded when a student has met the requirements listed below. A formal graduate program of at least 30 semester hours is

chosen in consultation with the major professor and the student's supervisory committee. At least 18 credits must be courses numbered 500 and above. For the thesis option, no more than 10 of the 500-level credits of Research and Thesis may be applied toward the degree.

1. Thesis option: General M.S. requirements apply except that the thesis requirement may be fulfilled by one or more journal publications at the discretion of the candidate's supervisory committee.
2. Non-thesis option: General M.S. requirements apply. A professional paper is required.

The Ph.D. degree is available with a major in Natural Resources. General Ph.D. requirements apply; see the section on "Natural Resources (p. 388)" for details.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the Master's in Fish and Wildlife Science degree.

1. Demonstrate understanding of the scientific method and qualitative/quantitative analysis methods.
2. Critically synthesize existing knowledge in science and their natural resource discipline and describe how their research represents a step forward towards the generation of new knowledge.
3. Critically apply theories, methodologies, and knowledge to address important questions in natural resources.
4. Conduct research of significance in a natural resource discipline or as part of a disciplinary or an interdisciplinary or creative project.
5. Plan and conduct this research or implement this project under the guidance of an advisor and/or committee while developing intellectual independence.
6. Develop potential ability in disseminating oral communication to peers in disciplinary research areas.
7. Develop potential ability in disseminating written communication to peers in disciplinary and/or interdisciplinary research areas.
8. Develop potential ability in disseminating and presenting complex information to non-science groups.
9. Develop potential expertise in a specialized research area in natural resources.
10. Demonstrate self-defined pathway for career following defense.
11. Develop potential ability for leadership in natural resource discipline.
12. Interact productively with people from diverse backgrounds and team members with integrity and professionalism.
13. Develop potential ability, through service, for the value of their discipline to the academy and community at large.
14. Follow the principles of ethics in their field and in academia.

Fisheries Science (B.S.)

Students pursuing a B.S. degree in Fisheries Science must have received a grade of 'C' or better in each of the following four indicator courses to register for FISH or WLF upper-division courses and to graduate with a B.S.: BIOL 114, BIOL 213, FOR 221, and STAT 251.

To graduate, students must achieve a grade of 'C' or better in each FISH or WLF upper-division course listed in the requirements for the B.S. degree.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
Fisheries Core		
<i>First and Second Years</i>		
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Structure and Function Across the Tree of Life	4
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
FISH 102	The Fish and Wildlife Professions	1
WLF 220	Principles of Ecology	3
or FOR 221	Principles of Ecology	
FOR 235	Society and Natural Resources	3
FOR 375	Fundamentals of Geomatics	3
or GEOG 385	Foundations of GIS	
NR 101	Exploring Natural Resources	2
STAT 251	Statistical Methods	3
WLF 201	Fish and Wildlife Applications	2
WLF 370	Management and Communication of Scientific Data	3
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		4
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
<i>Third and Fourth Years</i>		
FISH 314	Fish Ecology	3
FISH 315	Fish Ecology Field Techniques and Methods	2
FISH 415	Limnology	4
FISH 418	Fisheries Management	4
FISH 481	Ichthyology	4
FISH 495	Fisheries Seminar	1
WLF 448	Fish and Wildlife Population Ecology (Aquaculture and Hatchery Management)	4
<i>Emphasis</i>		
Select one of the following emphases:		25-35
Conservation Law Enforcement (p. 404)		
Science and Management (p. 404)		

Aquaculture and Hatchery Management (p. 404)

Total Hours 96-106**A. Conservation Law Enforcement Emphasis**

Code	Title	Hours
CRIM 101	Introduction to Criminology	3
PHIL 103	Introduction to Ethics	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
WLF 205	Wildlife Law Enforcement	2
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
BIOL 250	General Microbiology	
BIOL 310	Genetics	
GENE 314	General Genetics	
Internship:		2
FISH/WLF 398	Renewable Natural Resources Internship	
FISH 498	Internship	
Fisheries and Wildlife Science Electives (select a minimum of 6 credits):		6
FISH 411	Fish Physiology	
FISH 422	Concepts in Aquaculture	
FISH 424	Fish Health Management	
FISH 430	Riparian and River Ecology	
FISH 450	Ecology & Conservation of Freshwater Invertebrates	
FISH 451	Freshwater Invertebrate Field Methods	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 315	Techniques Laboratory	
WLF 411	Wildland Habitat Ecology and Assessment	
WLF 440	Conservation Biology	
Select one of the following:		3
COMM 233	Interpersonal Communication	
COMM 335	Intercultural Communication	
COMM 410	Conflict Management	
NRS 387	Environmental Communication Skills	
NRS 311	Public Involvement in Natural Resource Management	
NRS 364	Politics of the Environment	
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 462	Natural Resource Policy	
Select one of the following:		3
CRIM 301	Criminological Theory	
CRIM 339	Crime and the Media	
CRIM 334	Policing	
CRIM 415	Citizen's Police Academy	
CRIM 439	Inequalities in the Justice System	
PSYC 319	Environmental Psychology	
PSYC 320	Introduction to Social Psychology	

SOC 201 Introduction to Inequity and Justice

SOC 230 Social Problems

SOC 343 Power, Politics, and Society

SOC 420 Sociology of Law

Total Hours 34-35**Courses to total 120 credits for this degree****B. Science and Management Emphasis**

Code	Title	Hours
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 310	Genetics	3
or GENE 314	General Genetics	
FISH 411	Fish Physiology	2
FISH 422	Concepts in Aquaculture	4
or FISH 424	Fish Health Management	
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
Internship		2
FISH/WLF 398	Renewable Natural Resources Internship	
FISH 498	Internship	
Fisheries Science Electives (pick a minimum of 3 credits):		3
FISH 430	Riparian and River Ecology	
FISH 450	Ecology & Conservation of Freshwater Invertebrates	
FISH 451	Freshwater Invertebrate Field Methods	
FISH 497	Senior Thesis	
FISH 499	Directed Study	
Select one of the following electives:		2-3
COMM 410	Conflict Management	
FOR/NRS 484	Forest Policy and Administration	
NRS 386	Managing Complex Environmental Systems	
NRS 387	Environmental Communication Skills	
NRS 311	Public Involvement in Natural Resource Management	
NRS 364	Politics of the Environment	
NRS 462	Natural Resource Policy	
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 488	NEPA in Policy and Practice	
WLF 205	Wildlife Law Enforcement	
WLF 440	Conservation Biology	

Total Hours 25-26**Courses to total 120 credits for this degree****C. Aquaculture and Hatchery Management Emphasis**

Code	Title	Hours
FISH 411	Fish Physiology	2
FISH 422	Concepts in Aquaculture	4
FISH 424	Fish Health Management	4
Select one of the following:		3
ECON 201	Principles of Macroeconomics	

ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
NRS 383	Natural Resource and Ecosystem Service Economics	
Internship:		2
FISH/WLF 398	Renewable Natural Resources Internship	
FISH 498	Internship	
Science Electives (select a minimum of 6 credits):		6
BIOL 250	General Microbiology	
BIOL 310	Genetics	
	or GENE 314 General Genetics	
AVS 305	Animal Nutrition	
FISH 497	Senior Thesis	
FISH 499	Directed Study (Business Skills or Policy Electives (select a minimum of 6 credits):)	
Business, Skills, or Policy Electives (select a minimum of 6 credits):		6
AGEC 278	Farm and Agribusiness Management	
ASM 107	Beginning Welding	
BUS 190	Integrated Business and Value Creation	
COMM 410	Conflict Management	
ENTR 414	Entrepreneurship	
MKTG 321	Marketing	
NRS 311	Public Involvement in Natural Resource Management	
NRS 386	Managing Complex Environmental Systems	
NRS 387	Environmental Communication Skills	
NRS 462	Natural Resource Policy	
NRS 488	NEPA in Policy and Practice	

Total Hours **27**

Courses to total 120 credits for this degree

A. Conservation Law Enforcement Emphasis

Fall Term 1		Hours
BIOL 114	Organisms and Environments	4
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
Hours		15
Spring Term 1		
CRIM 101	Introduction to Criminology	3
ENGL 102	Writing and Rhetoric II	3
FISH 102	The Fish and Wildlife Professions	1
PSYC 101	Introduction to Psychology	3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		14
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 275	Carbon Compounds	3
or CHEM 277	or Organic Chemistry I	
FOR 235	Society and Natural Resources	3
WLF 220	Principles of Ecology	3
or FOR 221	or Principles of Ecology	
WLF 201	Fish and Wildlife Applications	2
Hours		15

Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
STAT 251	Statistical Methods	3
WLF 205	Wildlife Law Enforcement	2
WLF 370	Management and Communication of Scientific Data	3
(GEOG 100 AND GEOG 100L) OR (GEOL 101 AND GEOL 101L) OR (PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L) OR (SOIL 205 AND SOIL 206)		4
Hours		16

Fall Term 3		
FISH 314	Fish Ecology	3
FISH 315	Fish Ecology Field Techniques and Methods	2
FISH 398 OR WLF 398 OR FISH 498		1
PHIL 103	Introduction to Ethics	3
SOC 101	Introduction to Sociology	3
BIOL 250 OR BIOL 310 OR GENE 314		3
Hours		15

Spring Term 3		
FISH 481	Ichthyology	4
FISH 422	Concepts in Aquaculture	4
or FISH 424	or Fish Health Management	
FISH 398 OR WLF 398 OR FISH 498		1
International Course		3
Communication/Policy Course, Major Elective Course		3
Hours		15

Fall Term 4		
FISH 398	Renewable Natural Resources Internship	1
FISH 415	Limnology	4
FISH 418	Fisheries Management	4
FOR 375	Fundamentals of Geomatics	3
or GEOG 385	or Foundations of GIS	
Criminology/Sociology/Psychology, Major Elective Course		3
Hours		15

Spring Term 4		
FISH 495	Fisheries Seminar	1
WLF 448	Fish and Wildlife Population Ecology	4
FISH 424	Fish Health Management	4
or FISH 422	or Concepts in Aquaculture	
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Hours		15
Total Hours		120

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B. Fisheries Science and Management Emphasis

Fall Term 1		Hours
BIOL 114	Organisms and Environments	4
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
FISH 102	The Fish and Wildlife Professions	1

MATH 160 or MATH 170	Survey of Calculus or Calculus I	4
(CHEM 101 AND CHEM 101L) OR (CHEM 111 OR CHEM 111L)		4
(GEOL 101 AND GEOL 101L) OR (PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L) OR (SOIL 205 AND SOIL 206)		4
Hours		16
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
WLF 220/FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
WLF 201	Fish and Wildlife Applications	2
American Diversity Course		3
Hours		15
Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
CHEM 275	Carbon Compounds	3
STAT 251	Statistical Methods	3
WLF 370	Management and Communication of Scientific Data	3
Social and Behavioral Ways of Knowing Course		3
Hours		16
Fall Term 3		
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
FISH 314	Fish Ecology	3
FISH 315	Fish Ecology Field Techniques and Methods	2
BIOL 310 OR GENE 314		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		16
Spring Term 3		
FISH 481	Ichthyology	4
FISH 398 OR FISH 498 OR WLF 398		1
Fisheries Sciences Elective, Major Elective Course		4
International Course		3
Elective Course		1
Hours		13
Fall Term 4		
FISH 415	Limnology	4
FISH 418	Fisheries Management	4
FISH 398	Renewable Natural Resources Internship	1
FOR 375 or GEOG 385	Fundamentals of Geomatics or Foundations of GIS	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Spring Term 4		
FISH 411	Fish Physiology	2
FISH 495	Fisheries Seminar	1
WLF 448	Fish and Wildlife Population Ecology	4
FISH 422 or FISH 424	Concepts in Aquaculture or Fish Health Management	4
Policy/Communications, Major Elective Course		3
Hours		14
Total Hours		120

C. Aquaculture and Hatchery Management Emphasis

Fall Term 1		Hours
BIOL 114	Organisms and Environments	4
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
Hours		15

Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
FISH 102	The Fish and Wildlife Professions	1
(CHEM 101 AND CHEM 101L) OR (CHEM 111 OR CHEM 111L)		4
(GEOG 100 AND GEOG 100L) OR (GEOL 101 AND GEOL 101L) OR (PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L) OR (SOIL 205 AND SOIL 206)		4
Business Skills, Major Elective Course		3
Hours		15
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
WLF 220/FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
WLF 201	Fish and Wildlife Applications	2
American Diversity Course		3
Hours		15
Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
STAT 251	Statistical Methods	3
CHEM 275 or CHEM 277	Carbon Compounds or Organic Chemistry I	3
WLF 370	Management and Communication of Scientific Data	3
Science Elective, Major Elective Course		3
Hours		16
Fall Term 3		
FISH 314	Fish Ecology	3
FISH 315	Fish Ecology Field Techniques and Methods	2
(ECON 201) OR (ECON 202) OR (ECON 272) OR (NRS 383)		3
(FISH 398) OR (WLF 398) OR (FISH 498)		1
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		15
Spring Term 3		
FISH 481	Ichthyology	4
FISH 422 or FISH 424	Concepts in Aquaculture or Fish Health Management	4
(FISH 398) OR (WLF 398) OR (FISH 498)		1
International Course		3
Science Elective, Major Elective Course		4
Hours		16
Fall Term 4		
FISH 415	Limnology	4
FISH 418	Fisheries Management	4
FOR 375 or GEOG 385	Fundamentals of Geomatics or Foundations of GIS	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		14
Spring Term 4		
FISH 411	Fish Physiology	2
FISH 495	Fisheries Seminar	1
WLF 448	Fish and Wildlife Population Ecology	4
FISH 422 or FISH 424	Concepts in Aquaculture or Fish Health Management	4
Business Skills, Major Elective Course		3
Hours		14
Total Hours		120

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Registrar's Office regarding your official degree/certificate completion status.

Shared Outcomes

1. The student will be able to: identify regional fish species and describe their biological characteristics and ecological requirements,
2. The student will be able to: develop and test hypotheses and produce tabular and graphic summaries of quantitative data.
3. The student will be able to effectively use diverse forms of communication (written and oral) to convey information to scientific audiences
4. The student will be able to explain and discuss diverse points of view about natural resource issues.
5. The student will be able to: work effectively in team settings.
6. The student demonstrates an understanding of ethical professional behavior.

Science and Management Emphasis Area

7) The student will be able to: integrate biological, ecological and social information to make science-based recommendations for management.

Conservation Law Enforcement Emphasis area

7) Student can define basic legal terms and principles that apply to conservation law enforcement conservation

8) Student can demonstrate an understanding of the impact wildlife crime has on the resource

Fishery Sciences Minor

Code	Title	Hours
BIOL 314	Ecology and Population Biology	3-4
or FOR 221	Principles of Ecology	
or WLF 220	Principles of Ecology	
FISH 314	Fish Ecology	3
FISH 315	Fish Ecology Field Techniques and Methods	2
FISH 495	Fisheries Seminar	1
Select three courses from the following:		11-12
FISH 415	Limnology	
FISH 418	Fisheries Management	
FISH 422	Concepts in Aquaculture	
FISH 424	Fish Health Management	
FISH 430	Riparian and River Ecology	
FISH 481	Ichthyology	
Total Hours		20-22

Courses to total 20 credits for this minor

Tribal Natural Resources Stewardship Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
AIST 298	Tribal Natural Resource Internship	1
or AIST 498	Internship	
AIST 453	Tribal Sovereignty and Federal Policy	3
FOR 221/ WLF 220	Principles of Ecology	3
FOR 310	Indigenous Culture and Ecology	3
FOR 375	Fundamentals of Geomatics	3
or GEOG 385	Foundations of GIS	
REM 280	Introduction to Wildland Restoration	2
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Select one of the following:		3-4
BE 433	Bioremediation	
BE 450	Environmental Hydrology	
FISH 314	Fish Ecology	
FISH 415	Limnology	
FISH 430	Riparian and River Ecology	
FIRE 326	Fire Ecology	
FOR 462	Watershed Science and Management	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
LARC 480	The Resilient Landscape	
REM 280	Introduction to Wildland Restoration	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 440	Conservation Biology	
Select one of the following:		3-4
FISH 481	Ichthyology	
FOR 220	Forest Biology & Dendrology	
PLSC 205	General Botany	
REM 252	Wildland Plant Identification	
REM 253	Wildland Plant Identification Field Studies	
REM 341	Systematic Botany	
Total Hours		25-27

Courses to total 26 credits for this certificate

Wildlife Resources Minor

Code	Title	Hours
BIOL 314	Ecology and Population Biology	3-4
or FOR 221	Principles of Ecology	
or WLF 220	Principles of Ecology	
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 315	Techniques Laboratory	2

Select any combination of the following:	9-12
BIOL 483 Mammalogy	
BIOL 489 Herpetology	
WLF 371 Physiological Ecology of Wildlife	
WLF 411 Wildland Habitat Ecology and Assessment	
WLF 418 Wildlife Monitoring	
WLF 440 Conservation Biology	
WLF 448 Fish and Wildlife Population Ecology	
WLF 482 Ornithology	
WLF 492 Wildlife Management	
Total Hours	17-21

Courses to total 18 credits for this minor

Wildlife Sciences (B.S.)

Students pursuing a B.S. in Wildlife Sciences must have received a grade of 'C' or better in each of the following four indicator courses to register in FISH or WLF upper-division courses: BIOL 114, BIOL 213, STAT 251, and one of FOR 221, NR 321, or WLF 220.

To graduate, a student must receive a grade of 'C' or better in each FISH or WLF upper-division course listed in the requirements for the B.S.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
Wildlife Sciences Core		
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life & 115L	4
BIOL 213	Structure and Function Across the Tree of Life	4
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
WLF 220	Principles of Ecology	3
or FOR 221	Principles of Ecology	
FOR 235	Society and Natural Resources	3
FOR 375	Fundamentals of Geomatics	3
or GEOG 385	Foundations of GIS	
NR 101	Exploring Natural Resources	2
STAT 251	Statistical Methods	3
WLF 102	The Fish and Wildlife Professions	1
WLF 201	Fish and Wildlife Applications	2
WLF 370	Management and Communication of Scientific Data	3
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 315	Techniques Laboratory	2
WLF 398	Renewable Natural Resources Internship	2
Select two of the following:		7-8
BIOL 483	Mammalogy	
BIOL 489	Herpetology	
FISH 481	Ichthyology	
WLF 482	Ornithology	

Emphasis

Select one of the following emphases: 44-59

Conservation Law Enforcement (p. 408)	
Human-Wildlife Interactions (p. 409)	
Wildlife Science and Management (p. 409)	
Total Hours	96-112

A. Conservation Law Enforcement Emphasis

Code	Title	Hours
CRIM 101	Introduction to Criminology	3
PHIL 103	Introduction to Ethics	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
WLF 205	Wildlife Law Enforcement	2
WLF 440	Conservation Biology	3
WLF 448	Fish and Wildlife Population Ecology	4
WLF 492	Wildlife Management	4
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following Physical Sciences with lab:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Select one of the following:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following Plant ID courses:		3
FOR 220	Forest Biology & Dendrology	
REM 341	Systematic Botany	
REM 252 & REM 253	Wildland Plant Identification and Wildland Plant Identification Field Studies	
Select one of the following Wildlife or Fish Science courses:		2-3
FISH 314	Fish Ecology	
FISH 430	Riparian and River Ecology	
WLF 371	Physiological Ecology of Wildlife	
WLF 411	Wildland Habitat Ecology and Assessment	
Select two of the following:		6
COMM 233	Interpersonal Communication	
COMM 335	Intercultural Communication	
COMM 410	Conflict Management	
NRS 387	Environmental Communication Skills	
NRS 311	Public Involvement in Natural Resource Management	
NRS 364	Politics of the Environment	
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 462	Natural Resource Policy	

Select one of the following:	3
CRIM 301 Criminological Theory	
CRIM 339 Crime and the Media	
CRIM 334 Policing	
CRIM 415 Citizen's Police Academy	
CRIM 439 Inequalities in the Justice System	
PSYC 319 Environmental Psychology	
PSYC 320 Introduction to Social Psychology	
SOC 201 Introduction to Inequity and Justice	
SOC 230 Social Problems	
SOC 343 Power, Politics, and Society	
SOC 420 Sociology of Law	

Total Hours 50-52

Courses to total 120 credits for this degree

B. Human-Wildlife Interactions Emphasis

Code	Title	Hours
<i>Wildlife Core</i>		
WLF 371	Physiological Ecology of Wildlife	2
WLF 411	Wildland Habitat Ecology and Assessment	2
WLF 440	Conservation Biology	3
WLF 448	Fish and Wildlife Population Ecology	4
WLF 492	Wildlife Management	4
<i>Human Core:</i>		
ECON 202	Principles of Microeconomics	3
NRS 310	Social Science Methods	4
NRS 311	Public Involvement in Natural Resource Management	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
NRS 386	Managing Complex Environmental Systems	3
Select one of the following:		3
HIST 424	American Environmental History	
NRS 462	Natural Resource Policy	
NRS 475	Local and Regional Environmental Planning	
NRS 488	NEPA in Policy and Practice	
Select one of the following Chemistry courses:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following Math courses:		3-4
MATH 143	College Algebra	
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following Botany courses:		3
REM 341	Systematic Botany	
REM 252 & REM 253	Wildland Plant Identification and Wildland Plant Identification Field Studies	
Select one of the following Tribal & Indigenous history and perspectives courses:		3
HIST 316	American Indian History	
AIST 445	Indigenous Ways of Knowing	

AIST 453	Tribal Sovereignty and Federal Policy	
Select one of the following Human Behavior and social process courses:		3
ANTH 420	Anthropological History and Theory	
COMM 410	Conflict Management	
NRS 387	Environmental Communication Skills	
POLS 439	Public Policy	
PSYC 320	Introduction to Social Psychology	
SOC 340	Environmental Sociology and Globalization	

Total Hours 50-51

Courses to total 120 credits for this degree

C. Wildlife Science and Management Emphasis

Code	Title	Hours
WLF 371	Physiological Ecology of Wildlife	2
WLF 411	Wildland Habitat Ecology and Assessment	2
WLF 440	Conservation Biology	3
WLF 448	Fish and Wildlife Population Ecology	4
WLF 492	Wildlife Management	4
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
SOIL 205 & SOIL 206	The Soil Ecosystem and The Soil Ecosystem Lab	
Select one of the following:		4
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
Select one of the following:		3
FOR 220	Forest Biology & Dendrology	
REM 341	Systematic Botany	
REM 252 & REM 253	Wildland Plant Identification and Wildland Plant Identification Field Studies	
Select one of the following:		3
BIOL 310	Genetics	
GENE 314	General Genetics	
Select one of the following:		3
CHEM 275	Carbon Compounds	
CHEM 277	Organic Chemistry I	
Select two of the following:		4-6
COMM 410	Conflict Management	
FOR/NRS 484	Forest Policy and Administration	
NRS 387	Environmental Communication Skills	
NRS 462	Natural Resource Policy	
WLF 205	Wildlife Law Enforcement	

NRS 311	Public Involvement in Natural Resource Management	
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 364	Politics of the Environment	
NRS 386	Managing Complex Environmental Systems	
NRS 475	Local and Regional Environmental Planning	
NRS 484	Forest Policy and Admin	
NRS 488	NEPA in Policy and Practice	

Total Hours **40-42**

Courses to total 120 credits for this degree

A. Conservation Law Enforcement Emphasis

Fall Term 1		Hours
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
NR 101	Exploring Natural Resources	2
MATH 143 OR MATH 160 OR MATH 170		3
Hours		15

Spring Term 1		Hours
BIOL 114	Organisms and Environments	4
ENGL 102	Writing and Rhetoric II	3
WLF 102	The Fish and Wildlife Professions	1
CRIM 101	Introduction to Criminology	3
Major Course Elective		3
Hours		14

Fall Term 2		Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
FOR 235	Society and Natural Resources	3
STAT 251	Statistical Methods	3
WLF 201	Fish and Wildlife Applications	2
WLF 220 or FOR 221	Principles of Ecology or Principles of Ecology	3
Hours		15

Spring Term 2		Hours
BIOL 213	Structure and Function Across the Tree of Life	4
WLF 370	Management and Communication of Scientific Data	3
PSYC 101	Introduction to Psychology	3
Physical Science, Major Elective Course		4
American Diversity Course		3
Hours		17

Fall Term 3		Hours
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 315	Techniques Laboratory	2
SOC 101	Introduction to Sociology	3
(REM 252 AND REM 253) OR FOR 220 OR REM 341		3
FISH 314 OR FISH 430 OR WLF 371 OR WLF 411		2
WLF 398	Renewable Natural Resources Internship	2
Hours		15

Spring Term 3		Hours
WLF 205	Wildlife Law Enforcement	2
WLF 448	Fish and Wildlife Population Ecology	4
PHIL 103	Introduction to Ethics	3
COMM 233 OR COMM 335 OR COMM 410 OR NRS 311 OR NRS 364 OR NRS 387 OR NRS 462		3

International	3
Hours	15

Fall Term 4		Hours
FOR 375 or GEOG 385	Fundamentals of Geomatics or Foundations of GIS	3
WLF 440	Conservation Biology	3
COMM 233 OR COMM 335 OR COMM 410 OR NRS 311 OR NRS 364 OR NRS 387 OR NRS 462		3
BIOL 483 OR BIOL 489 OR FISH 481 OR WLF 482		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15

Spring Term 4		Hours
WLF 492	Wildlife Management	4
CRIM 301 OR CRIM 334 OR CRIM 339 OR CRIM 415 OR PSYC 319 OR PSYC 320 OR SOC 201 OR SOC 230 OR SOC 343 OR SOC 420		3
BIOL 483 OR BIOL 489 OR FISH 481 OR WLF 482		3
Elective Course		3
Elective Course		1
Hours		14
Total Hours		120

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B. Human-Wildlife Interactions Emphasis

Fall Term 1		Hours
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
NR 101	Exploring Natural Resources	2
MATH 143 OR MATH 160 OR MATH 170		3
Hours		15

Spring Term 1		Hours
BIOL 114	Organisms and Environments	4
ECON 202	Principles of Microeconomics	3
ENGL 102	Writing and Rhetoric II	3
WLF 102	The Fish and Wildlife Professions	1
Humanistic or Artistic Ways of Knowing Course		3
Hours		14

Fall Term 2		Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
FOR 235	Society and Natural Resources	3
STAT 251	Statistical Methods	3
WLF 201	Fish and Wildlife Applications	2
WLF 220 or FOR 221	Principles of Ecology or Principles of Ecology	3
Hours		15

Spring Term 2		Hours
BIOL 213	Structure and Function Across the Tree of Life	4
WLF 370	Management and Communication of Scientific Data	3
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
WLF 398 or FISH 398	Renewable Natural Resources Internship or Renewable Natural Resources Internship	1
Hours		14

Fall Term 3		
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 315	Techniques Laboratory	2
NRS 310	Social Science Methods	4
(REM 252 AND REM 253) OR REM 341		3
HIST 424 OR NRS 462 OR NRS 475 OR NRS 488		3
WLF 398 or FISH 398	Renewable Natural Resources Internship or Renewable Natural Resources Internship	1
Hours		16
Spring Term 3		
NRS 311	Public Involvement in Natural Resource Management	3
WLF 448	Fish and Wildlife Population Ecology	4
WLF 371	Physiological Ecology of Wildlife	2
AIST 453 OR AIST 445 OR HIST 316		3
International Course		3
Hours		15
Fall Term 4		
FOR 375 or GEOG 385	Fundamentals of Geomatics or Foundations of GIS	3
NRS 386	Managing Complex Environmental Systems	3
WLF 440	Conservation Biology	3
WLF 411	Wildland Habitat Ecology and Assessment	2
BIOL 483 OR BIOL 489 OR FISH 481 OR WLF 482		3
Elective Course		1
Hours		15
Spring Term 4		
NRS 383	Natural Resource and Ecosystem Service Economics	3
WLF 492	Wildlife Management	4
ANTH 420 OR COMM 410 OR NRS 387 OR POLS 439 OR PSYC 320 OR SOC 340		3
BIOL 483 OR BIOL 489 OR FISH 481 OR WLF 482		3
Elective		3
Hours		16
Total Hours		120

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C. Wildlife Science and Management Emphasis

Fall Term 1		Hours
CHEM 101	Introduction to Chemistry	3
CHEM 101L	Introduction to Chemistry Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
Hours		15
Spring Term 1		
BIOL 114	Organisms and Environments	4
ENGL 102	Writing and Rhetoric II	3
WLF 102	The Fish and Wildlife Professions	1
MATH 160 or MATH 170	Survey of Calculus or Calculus I	4
Social and Behavioral Ways of Knowing Course		3
Hours		15
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1

FOR 235	Society and Natural Resources	3
STAT 251	Statistical Methods	3
WLF 201	Fish and Wildlife Applications	2
WLF 220 or FOR 221	Principles of Ecology or Principles of Ecology	3
Hours		15
Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
WLF 370	Management and Communication of Scientific Data	3
CHEM 275 or CHEM 277	Carbon Compounds or Organic Chemistry I	3
(GEOL 101 AND GEOL 101L) OR (PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L) OR (SOIL 205 AND SOIL 206)		4
Hours		14
Fall Term 3		
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 315	Techniques Laboratory	2
(REM 252 AND REM 253) OR REM 341 OR FOR 220		3
BIOL 310 OR GENE 314		3
WLF 398	Renewable Natural Resources Internship	2
American Diversity Course		3
Hours		16
Spring Term 3		
WLF 371	Physiological Ecology of Wildlife	2
WLF 448	Fish and Wildlife Population Ecology	4
COMM 410 OR FOR 484 OR NRS 311 OR NRS 386 OR NRS 387 OR NRS 462 OR NRS 364 OR NRS 475 OR NRS 488 OR WLF 205		3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Hours		15
Fall Term 4		
FOR 375 or GEOG 385	Fundamentals of Geomatics or Foundations of GIS	3
WLF 411	Wildland Habitat Ecology and Assessment	2
WLF 440	Conservation Biology	3
BIOL 483 OR BIOL 489 OR FISH 481 OR WLF 482		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		1
Hours		15
Spring Term 4		
WLF 492	Wildlife Management	4
BIOL 483 OR BIOL 489 OR FISH 481 OR WLF 482		4
Major Elective Course		3
Elective Course		3
Elective Course		1
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Shared Outcomes

1. The student will be able to: identify regional wildlife species and describe their biological characteristics and ecological requirements,
2. The student will be able to: develop and test hypotheses and produce tabular and graphic summaries of quantitative data.

3. The student will be able to: effectively use diverse forms of communication (written, oral) to convey information to scientific audiences.
4. The student will be able to explain and discuss diverse points of view about natural resource issues.
5. The student demonstrates an understanding of ethical professional behavior.

Science and Management Emphasis area

6. Student will be able to: integrate biological, ecological, and social information to make science-based recommendations for management.
7. The student: will be able to work effectively in team settings.

Conservation Law Enforcement Emphasis area

6. Student can define basic legal terms and principles that apply to conservation law enforcement
7. The student demonstrates an understanding of the impact wildlife crime has on the resource

Human Wildlife Emphasis area

6. The student: will be able to work effectively in team settings.
7. The student will be able to Integrate biological, ecological and social information to make science-based recommendations for management.
8. The student will be able to: describe and evaluate social science research principles and methods used in human dimensions of wildlife management.

Department of Forest, Rangeland, and Fire Sciences

Charles Goebel, Department Head (204 CNR Bldg. 83844-1133; phone 208-885-7952; frfs@uidaho.edu).

The Department of Forest, Rangeland, and Fire Sciences (FRFS, www.uidaho.edu/frfs) offers five undergraduate Bachelor of Science (B.S.) degrees in Ecology and Ecosystem Science; Forest Resources; Fire Ecology and Management; Rangeland Ecology and Management; and Forest and Sustainable Products.

The Department offers three undergraduate Associate of Science (A.S.) degrees in Forest Nursery Technology & Operations; Forest Harvesting Technology & Operations; and Wildland Fuel and Fire Technology.

While graduate degrees are administered through the College of Natural Resources, students can select a specialization within FRFS that would lead to either a Master of Science in Natural Resources (thesis and non-thesis options) or a Doctor of Philosophy in Natural Resources (see Forest, Rangeland, and Fire Sciences Graduate Degree Programs for more information). Students seeking an advanced degree of the professional nature should explore the Master of Natural Resources program, for which faculty in FRFS serve as mentors.

Undergraduate and graduate students in the Department of Forest, Rangeland, and Fire Sciences are provided with an opportunity to learn from globally-recognized faculty. Using a mix of teaching methods, students are exposed to both the scientific background and the hands-on practice needed to become leaders in their chosen field. Extensive

opportunities exist for students to develop as practitioners and scientists through partnership with our Experimental Forest, Pitkin Forest Nursery, numerous laboratories (Fire, Forest Operations, Paleoecology, Rangeland Ecology, Forest and Sustainable Products, Seedling Quality) and regional cooperative units.

Department faculty and administration strive to provide graduates with diverse opportunities for personal growth while maintaining curricula that ensure competency upon entering the workforce or continuing into advanced study. Students are provided with courses that expand critical thinking skills and understanding of concepts rather than rote learning of facts and principles. Class sizes are managed to appropriate student to faculty ratios for the subject matter to be taught effectively. Courses emphasize the dynamic nature of forest, rangeland, and fire sciences and technologies by incorporating new concepts and methods as they emerge. Field and lab-based study is also an integral part of all curricula. The faculty and staff of the college encourage and assist students in finding seasonal professional employment and opportunities for involvement in student clubs and professional organizations. Faculty members seek to provide research opportunities for students that advance science in the broad fields of study in which they have expertise.

Bachelor of Science in Ecology & Ecosystem Science

Ecology is the study of the relationships between living organisms, including humans, and their physical environment. Ecologists seek to understand the vital connections of natural and artificial ecosystems.

By focusing on ecological, cultural, and sociological relationships; studying how living and nonliving factors interact; and asking what organisms need to survive and thrive, our students are prepared to address complex, interdisciplinary problems that threaten ecosystems across the world.

The Ecology & Ecosystems Science curriculum is strongly grounded on research, culminating in a guided, hands-on senior thesis experience. Students may research topics such as the removal or return of apex predators or the strengths and weaknesses of invasive species on ecosystems.

Graduates are equipped to be leaders in ecology, providing critical insight to our changing biosphere. Our ecologists go on to work in academia, government agencies such as the U.S. Geological Survey, and non-governmental organizations like Conservation International. Our ecologists perform fieldwork to analyze environmental conditions and habitats, and they gather information for ecosystem management or restoration projects. Graduates go on to create essential solutions to worldwide problems such as biodiversity conservation, disease dynamics, the effects of anthropogenic changes, and the course of pollutants.

Bachelor of Science in Fire Ecology and Management

The College of Natural Resources has provided over 35 years of leadership in fire education. We offer more courses focused on fire than any other natural resources school in the country. Our courses and degree programs are developed to help students understand fundamental concepts, the science behind issues, and the skills to become leaders in fire and natural resource management. Our fire research program attracts top graduate students and collaborates both with the leading fire scientists and innovative effective fire managers. Our research and

outreach efforts provide useful, timely, and sound science to address fire ecology and management issues across the state, region, and nation.

We provide a range of educational opportunities for wildland fire managers and others interested in a career in wildland fire research with a focus on solving real world problems through an interdisciplinary approach that focuses on educating current and future fire professional leaders. The B.S. in Fire Ecology and Management has recently been recognized by the national Association for Fire Ecology as a leading program in the US.

A fire ecology and management academic minor as well as academic certificates in fire ecology, management, and technology are also available.

Bachelor of Science in Forest and Sustainable Products

Forest and sustainable products are those that can be replaced by biological means, such as sustainably-managed forests or residues from agricultural food crops, and offer environmental benefits as well as useful products for society. Renewable and biodegradable materials typically consume less energy in their preparation and can be reused, recycled, or composted at the end of their useful life. Wood is a primary renewable, recyclable, and biodegradable material in the U.S. and the world and is used to produce over 5,000 different products for shelter, packaging, and chemicals. Renewable, bio-based energy sources reduce greenhouse gas emissions and contribute to energy self-reliance.

The B.S. Forest and Sustainable Products curriculum prepares students for a wide range of careers in the manufacture, marketing, and utilization of sustainable, renewable materials. Interdisciplinary coursework and project-based learning opportunities lead to a choice of several career tracks including procurement of timber and other renewable materials; production management, marketing and distribution of bio-based products; green building materials selection, construction and design; and bio-based energy production systems. The undergraduate curriculum is structured, but it still allows students to follow specific interests through course selection from restricted and unrestricted electives in the areas of architecture, business, entrepreneurship, forest operations, and agriculture. This degree program is accredited by the Society of Wood Science and Technology.

Bachelor of Science in Forestry

Forestry is "managing and using for human benefit the forest lands and natural resources that occur on and in association with forest lands." These benefits may include values, services, or products such as stable human communities, aesthetics, biodiversity, recreational opportunities, clean water and air, soil protection, forage, fish and wildlife, medicinal and ornamental items, wood products, and many others. One-third of the nation's land area and 40 percent of Idaho's land area are forested. Present-day forest management requires professionals highly trained in an interdisciplinary approach that adapts to scientific developments and sociological and economic constraints while sustaining healthy forest ecosystems.

The B.S. Forestry is accredited by the Society of American Foresters, the specialized accrediting body recognized by the Commission on Recognition of Post-secondary Accreditation as the accrediting agency for forestry in the United States.

The B.S. Forestry curriculum provides students with an interdisciplinary education founded on the principles of science-based stewardship.

Students are given an opportunity to strengthen their understanding of ecology, forest ecosystem processes, social sciences, remote sensing and geographic information systems, silviculture, pest management, forest operations, and other specialties by selective use of elective credits. Graduates with a professional forestry degree are employed by a wide range of federal and state forestry and natural resource agencies; private forestland companies, such as Potlatch-Deltic, Forest Capital, Weyerhaeuser; consulting companies that work with private non-industrial forest landowners and others that do environmental assessments and monitoring of forest lands; and non-governmental agencies that manage and/or are interested in forest ecosystem land management.

Specific learning outcomes associated with the B.S. Forestry include developing the ability to:

- Communicate effectively by listening actively, formulating, articulating, and explaining ideas clearly using oral and written techniques;
- Demonstrate critical thinking and problem-solving skills;
- Demonstrate skills in working with teams of people, including effective leadership of groups working toward a common goal;
- Develop and apply scientific knowledge (i.e. ecological, social, and economic) to evaluate and justify forest management decisions;
- Access, evaluate, and appropriately use scientific literature, technologies, and expert advice when considering critical resource issues and management alternatives;
- Forecast potential outcomes of forestry decisions in time and space, while considering risks and uncertainty; and
- Assess forest, site, and socioeconomic conditions across temporal and spatial scales using appropriate metrics.

Bachelor of Science in Rangeland Ecology and Management

"Rangeland" describes the extensive, unforested lands dominating the western half of the continent and covering half of land's earth surface, including 48% of Idaho. Rangelands around the world are known by many names including prairie, plains, grassland, shrubland, savanna, steppe, desert, semi-desert, sward, tundra, and alpine.

Limited precipitation, generally sparse vegetation, sharp climatic extremes, highly variable soils, frequent salinity, and diverse topography characterize the kind of land called "rangeland." Rangelands produce a wide variety of goods and services desired by society, including livestock forage, wildlife habitat, water, mineral resources, wood products, wild-land recreation, open space, and natural beauty. The geographic extent and many important resources of rangelands make their proper use and management vitally important to people everywhere.

Rangeland managers enjoy careers with a variety of private organizations and government agencies. State and federal land management agencies, such as the US Forest Service, Bureau of Land Management, and State Department of Lands, hire rangeland professionals to oversee the management of public rangelands. Wildlife management agencies also hire range managers to maintain and improve wildlife habitat. Private landowners employ range consultants and managers to oversee livestock operations, enhance hunting programs, maintain forage resources, and control weeds. Biological assessment companies require the careful measurement and assessment of vegetation resources; therefore, they often hire rangeland professionals. A growing number of rangeland professionals work as natural resource facilitators to bring rangeland

stakeholders together to craft plans for environmental stewardship. Internships are also available. Over 85% of the graduates of the B.S. Rangeland Conservation program at the University of Idaho in the last 10 years have secured careers in natural resource management or advanced to graduate school.

Fire Ecology, Management and Technology Academic Certificate

This 15-credit certificate program is designed for traditional and non-traditional students who would like to receive more depth in the concepts, science, and tools currently used in fire ecology and management, or for those seeking educational requirements required for federal employment. After completing this certificate program, students will be able to apply sound science to solving complex issues facing fire management. Many of our students combine this certificate with other degrees.

Students who wish to complete the certificate program may register for courses online. We strongly recommend that you contact us at fire@uidaho.edu to talk to an advisor who will help you develop an individualized program of study to help meet your educational needs. Note that there is an additional fee for all online courses and for some campus-based courses and that there is no additional fee for part-time non-resident students who are taking online courses.

University of Idaho Academic Certificate Requirements: Course work must not be more than five years old unless it is being used in conjunction with the completion of a graduate degree; Up to six of the required credits may consist of coursework completed at another regionally accredited institution. For more information, please contact us or visit the following website: www.uidaho.edu/cnr/frfs (<http://www.uidaho.edu/cnr/frfs/>).

Associate of Science in Forest Nursery Management and Technology

This degree engages in an experiential commercial forest nursery program with an emphasis on practices, technology, and operations unique to the North American nursery industry. Students prepare to directly enter the workforce after two years of hands-on learning and training.

Students focus on propagation and production of trees, shrubs, and native plants using advanced technologies at the environmentally controlled modern greenhouses located at the University of Idaho's Pitkin Forest Nursery in Moscow. The University of Idaho is one of only two universities nationwide that operate a forest nursery on a commercial scale (400,000+ seedlings a year).

Students prepare with both business-related coursework and applied practices and engage with private enterprises and public nurseries to gain the skills necessary to manage a commercial nursery.

Associate of Science in Forest Operations and Technology

This degree prepares students to directly enter the workforce after two years of training and learning. Students develop hands-on training using modern forest harvesting equipment and technology to meet industry workforce needs on the University of Idaho's 10,000+ acre Experimental Forest near Moscow. The program partners with industry to train students in a variety of commercially available harvesting technologies.

The college also offers the nationally acclaimed Idaho's Logger Education and Advance Professionalism (LEAP) program and networking opportunities within coursework to form relationships with forestry companies and family forest owners.

Associate of Science in Wildland Fuel and Fire Technology

The A.S. in Wildland Fuel and Fire Technology is a two-year online program that prepares students for careers in the wildland fire sector. It is ideal for permanent and seasonal employees employed as wildland firefighters and fire suppression technicians and for professionals seeking to complete the Office of Personnel Management Federal Series certification.

Based on our nationally ranked B.S. Fire Ecology and Management degree, the program is built by faculty expertise with wildland fire and fuels management as well as an extensive network of stakeholders at federal and state levels. Faculty collaborate to develop online content with the National Wildfire Coordinating Group (NWCG), an operational group designed to coordinate fire management programs of eleven participating federal agencies, including training.

Graduate Programs

Graduate programs are offered in many specialization areas across five general topic areas in which FRFS faculty are conducting research:

1. Ecology and Biogeosciences of Forest and Rangeland Ecosystems: ecosystem processes/modeling, biometrics, biogeochemistry, hydrology and ecohydrology, remote sensing and geospatial ecology, landscape ecology, community ecology, population ecology, ecosystem ecology, disturbance ecology, paleoecology, restoration ecology, ecophysiology, global environmental change, conservation biology/genetics, and molecular plant systematic;
2. Forest Sciences and Management: forest mensuration, forest regeneration, forest ecosystem management, tree physiology, forest pathology, forest policy, forest operations, silviculture, forest ecology, and forest genetics;
3. Forest and Sustainable Products: procurement of timber and other renewable materials; production management, marketing and distribution of bio-based products; green building materials selection, construction and design; and bio-based energy production systems;
4. Fire Sciences and Management: fire effects and recovery, fire behavior, fuels management, biophysical controls of fire and fire regimes, air quality and smoke management, fire history, and fire ecology; and
5. Rangeland Sciences and Management: grazing behavior and management, invasive plant management, livestock-wildlife relations, rangeland and habitat management, rangeland riparian management, and rangeland ecology.

Admission to the graduate program is based on 1) the evidence of ability to complete graduate-level work as discerned from undergraduate transcripts, the applicant's statement of career objectives, and letters of recommendation; 2) the compatibility of the student's educational and career objectives with faculty expertise and departmental objectives; and 3) the availability of graduate faculty to act as major advisor for an applicant. An undergraduate degree related to our programs is also recommended, but an applicant may be accepted with the understanding that certain course deficiencies may be required by the student's advisory committee.

Students can transfer up to 12 approved credits taken as a non-degree seeking student into a M.S. or Ph.D. program in the College of Natural Resources with permission of the departmental graduate committee. Students who are considering transferring non-degree credits into a CNR graduate program should request early advising from the appropriate department.

Further information can be obtained from the department head (208-885-7952).

Majors

- Ecology and Ecosystem Science (B.S.) (p. 415)
- Forestry (B.S.Forestry) (p. 424)
- Fire Ecology and Management (B.S.Fire.Ecol.Mgmt.) (p. 418)
- Rangeland Ecology and Management (B.S.) (p. 427)
- Forest and Sustainable Products (B.S.) (p. 421)

Minors

- Ecology Minor (p. 418)
- Fire Ecology and Management Minor (p. 420)
- Forest Operations Minor (p. 423)
- Forest Resources Minor (p. 423)
- Rangeland Ecology and Management Minor (p. 428)
- Renewable Materials Minor (p. 429)

Associate of Science Degrees

- Forest Nursery Management and Technology (p. 422)
- Forest Operations and Technology (p. 422)
- Wildland Fuel and Fire Technology (p. 429)

Certificates

- Natural Resource Management Undergraduate Academic Certificate (p. 426)
- Restoration Ecology Undergraduate Academic Certificate (p. 429)

Forest, Rangeland, and Fire Sciences Graduate Program

- Forest, Rangeland, and Fire Science (M.S.) (p. 424)
- Forest, Rangeland, and Fire Science (Ph.D.) (p. 423)
- Fire Ecology, Management and Technology Graduate Academic Certificate (p. 420)

Ecology and Ecosystems Science (B.S.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1

BIOL 213	Structure and Function Across the Tree of Life	4
BIOL 310	Genetics	3
or GENE 314	General Genetics	
or BIOL 421	Advanced Evolution/Population Dynamics	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
COMM 101	Fundamentals of Oral Communication	3
ECON 202	Principles of Microeconomics	3
or ECON 272	Foundations of Economic Analysis	
ENGL 317	Technical Writing II	3
FOR 221	Principles of Ecology	3
or WLF 220	Principles of Ecology	
FOR 375	Fundamentals of Geomatics	3
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
NR 101	Exploring Natural Resources	2
NR 200	Seminar	1
NR 325	Community Ecology	3
NR 326	Ecosystem Ecology	3
NR 421		
NRS 235	Society and Natural Resources	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
Select one of the following:		4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
REM 429	Landscape Ecology	3
STAT 251	Statistical Methods	3
WLF 448	Fish and Wildlife Population Ecology	4
or FOR 448	Plant Population Ecology	
Select one of the following emphasis areas:		26-31
Aquatic Ecology (p. 415)		
Terrestrial Ecology (p. 416)		
Ecosystem Ecology (p. 416)		
Total Hours		96-101

A. Aquatic Ecology

Code	Title	Hours
FISH 415	Limnology	4
FISH 430	Riparian and River Ecology	3
SOIL 452	Environmental Water Quality	3
Select of of the following Tools and Technology courses:		3-4
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
NRS 472	Remote Sensing of the Environment	

REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)	
STAT 407	Experimental Design	
STAT 427	R Programming	
STAT 427	R Programming	
STAT 431	Statistical Analysis	
STAT 436	Applied Regression Modeling	
Select one of the following Organismal Biology courses:		4
BIOL 489	Herpetology	
FISH 481	Ichthyology	
FISH 450 & FISH 451	Ecology & Conservation of Freshwater Invertebrates and Freshwater Invertebrate Field Methods	
Complete a minimum of 9 credits from the following courses:		9
ENVS 450	Environmental Hydrology	
FISH 314	Fish Ecology	
FISH 315	Fish Ecology Field Techniques and Methods	
FISH 497 or FOR 497	Senior Thesis	
FOR 462	Watershed Science and Management	
GEOG 430	Climate Change Ecology	
REM 440	Restoration Ecology	
WLF 440	Conservation Biology	
Total Hours		26-27

Courses to total 120 credits for this degree.

B. Terrestrial Ecology

Code	Title	Hours
FOR 220 or REM 459	Forest Biology & Dendrology Rangeland Ecology	3
FIRE 326	Fire Ecology	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
WLF 314	Ecology of Terrestrial Vertebrates	3
WLF 411	Wildland Habitat Ecology and Assessment	2
Select one of the following Tools and Technology courses:		3
NRS 472	Remote Sensing of the Environment	
REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)	
STAT 422	Survey Sampling Methods	
STAT 431	Statistical Analysis	
WLF 370	Management and Communication of Scientific Data	
Select one of the following Organismal Biology courses:		3-4
BIOL 483	Mammalogy	
BIOL 489	Herpetology	
ENT 469	Introduction to Forest Insects	
FOR 468	Forest and Plant Pathology	
REM 465	Ecophysiology	
WLF 482	Ornithology	

Complete a minimum of 9 credits of upper-division courses selected in consultation with an advisor	9
Total Hours	30-31

Courses to total 122 credits for this degree.

C. Ecosystem Ecology

Code	Title	Hours
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
FOR 330	Terrestrial Ecosystem Ecology	4
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
SOIL 415 or SOIL 422	Soil and Environmental Physics Environmental Soil Chemistry	3
SOIL 425	Microbial Ecology	3
Select one of the following Remote Sensing Tools and Technology courses:		3
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
NRS 472	Remote Sensing of the Environment	
REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)	
Complete a minimum of 9 credits from the following courses:		9
GEOG 301	Meteorology	
GEOG 313	Global Climate Change	
GEOG 401	Climatology	
GEOG 407	Spatial Analysis and Modeling	
GEOG 430	Climate Change Ecology	
SOIL 450	Environmental Hydrology	
SOIL 452	Environmental Water Quality	
SOIL 454	Pedology	
STAT 427	R Programming	
STAT 431	Statistical Analysis	
Total Hours		31

Courses to total 123 credits for this degree.

A. Aquatic Ecology Emphasis

Fall Term 1	Hours	
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours	16	
Spring Term 1	Hours	
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
MATH 160 or MATH 170	Survey of Calculus or Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Hours	17	

Fall Term 2		
CHEM 275 or CHEM 277	Carbon Compounds or Organic Chemistry I	3
NR 200	Seminar (Current Issues in Ecology)	1
NRS 235	Society and Natural Resources	3
STAT 251	Statistical Methods	3
(PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L)		4
Hours		14
Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
FOR 221 or WLF 220	Principles of Ecology or Principles of Ecology	3
ECON 202 or ECON 272	Principles of Microeconomics or Foundations of Economic Analysis	3
American Diversity Course		3
Elective Course		1
Hours		14
Fall Term 3		
NR 325	Community Ecology	3
ENGL 317	Technical Writing II	3
BIOL 310 OR BIOL 421 OR GENE 314		3
Emphasis Area Elective, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Spring Term 3		
FOR 375	Fundamentals of Geomatics	3
NR 326	Ecosystem Ecology	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
BIOL 489 OR FISH 481 OR (FISH 450 AND FISH 451)		3
International Course		3
Hours		15
Fall Term 4		
NR 421		2
FISH 415	Limnology	4
GEOG 424 OR NRS 472 OR REM 475 OR STAT 407 OR STAT 427 OR STAT 431 OR STAT 436		3
Emphasis Area Elective, Major Elective Course		3
Emphasis Area Elective, Major Elective Course		3
Hours		15
Spring Term 4		
REM 429	Landscape Ecology	3
WLF 448 or FOR 448	Fish and Wildlife Population Ecology or Plant Population Ecology	4
FISH 430	Riparian and River Ecology	3
SOIL 452	Environmental Water Quality	3
Elective Course		1
Hours		14
Total Hours		120

B. Terrestrial Ecology

		Hours
Fall Term 1		
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		16
Spring Term 1		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
ENGL 102	Writing and Rhetoric II	3

MATH 160 or MATH 170	Survey of Calculus or Calculus I	4
COMM 101	Fundamentals of Oral Communication	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Fall Term 2		
CHEM 275 or CHEM 277	Carbon Compounds or Organic Chemistry I	3
NR 200	Seminar	1
NRS 235	Society and Natural Resources	3
FOR 220 or REM 459	Forest Biology & Dendrology or Rangeland Ecology	3
(PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L)		4
Hours		14
Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
FOR 221 or WLF 220	Principles of Ecology or Principles of Ecology	3
ECON 202 or ECON 272	Principles of Microeconomics or Foundations of Economic Analysis	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Hours		17
Fall Term 3		
NR 325	Community Ecology	3
BIOL 310 or BIOL 421 or GENE 314	Genetics or Advanced Evolution/Population Dynamics or General Genetics	3
ENGL 317	Technical Writing II	3
WLF 314	Ecology of Terrestrial Vertebrates	3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Spring Term 3		
FOR 375	Fundamentals of Geomatics	3
NR 326	Ecosystem Ecology	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
Emphasis Elective Course, Major Elective Course		3
International Course		3
Hours		15
Fall Term 4		
NR 421		2
FIRE 326	Fire Ecology	3
WLF 411	Wildland Habitat Ecology and Assessment	2
NRS 472 OR REM 475 OR STAT 422 OR STAT 431 OR WLF 370		3
Emphasis Area Elective, Major Elective Course		2
American Diversity Course		3
Hours		15
Spring Term 4		
REM 429	Landscape Ecology	3
WLF 448 or FOR 448	Fish and Wildlife Population Ecology or Plant Population Ecology	4
BIOL 483 OR BIOL 489 OR ENT 469 OR FOR 468 OR REM 465 OR WLF 482		3
Emphasis Area Elective, Major Elective Course		3
Hours		13
Total Hours		122

C. Ecosystem Ecology

		Hours
Fall Term 1		
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2

(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)	4	
Hours	16	
Spring Term 1		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
COMM 101	Fundamentals of Oral Communication	3
ENGL 102	Writing and Rhetoric II	3
MATH 160 or MATH 170	Survey of Calculus or Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Hours	17	
Fall Term 2		
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
NR 200	Seminar	1
NRS 235	Society and Natural Resources	3
STAT 251	Statistical Methods	3
(PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L)		4
Hours	16	
Spring Term 2		
BIOL 213	Structure and Function Across the Tree of Life	4
FOR 221 or WLF 220	Principles of Ecology or Principles of Ecology	3
ECON 202 or ECON 272	Principles of Microeconomics or Foundations of Economic Analysis	3
CHEM 275 or CHEM 277	Carbon Compounds or Organic Chemistry I	3
Hours	13	
Fall Term 3		
NR 325	Community Ecology	3
BIOL 310 or BIOL 421 or GENE 314	Genetics or Advanced Evolution/Population Dynamics or General Genetics	3
ENGL 317	Technical Writing II	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
Humanistic and Artistic Ways of Knowing Course		3
Hours	16	
Spring Term 3		
FOR 375	Fundamentals of Geomatics	3
NR 326	Ecosystem Ecology	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
FOR 330	Terrestrial Ecosystem Ecology	4
International Course		3
Hours	16	
Fall Term 4		
NR 421		2
SOIL 415 or SOIL 422	Soil and Environmental Physics or Environmental Soil Chemistry	3
GEOG 424 or NRS 472 or REM 475	Hydrologic Applications of GIS and Remote Sensing or Remote Sensing of the Environment or Remote Sensing Application with Unmanned Aerial Systems (UAS)	3
Emphasis Area Elective, Major Elective Course		3
Emphasis Area Elective, Major Elective Course		3
Hours	14	
Spring Term 4		
REM 429	Landscape Ecology	3
SOIL 425	Microbial Ecology	3
WLF 448 or FOR 448	Fish and Wildlife Population Ecology or Plant Population Ecology	4
Emphasis Area Elective, Major Elective Course		2

American Diversity Course	3
Hours	15
Total Hours	123

After completing the B.S., Ecology and Ecosystem Science, students will be able to:

- 1) Explain basic population, community, ecosystem, and landscape ecology concepts, how these processes shape evolutionary processes, and regulate the distribution, abundance and diversity of organisms.
- 2) Evaluate how ecological process across all scales are affected by human activities.
- 3) Effectively use field and laboratory techniques commonly used in the field of ecology and ecosystem science.
- 4) Effectively use quantitative methods to analyze and understand ecological systems, including the interpretation of numeric and graphical data.
- 5) Synthesize information from the primary scientific literature and logically interpret the results of original research in the context of established ecological knowledge.
- 6) Effectively practice written and oral communication skills necessary to communicate research findings and interpretations to diverse audiences, including policy makers, scientists, stake holders and the general public.

Ecology Minor

Code	Title	Hours
BIOL 314	Ecology and Population Biology	3-4
or FOR 221	Principles of Ecology	
GEOG 430	Climate Change Ecology	3
REM 429	Landscape Ecology	3
Select 9 credits from the following:		9
FISH 314	Fish Ecology	
FISH 415	Limnology	
FISH 430	Riparian and River Ecology	
FIRE 326	Fire Ecology	
FOR 330	Terrestrial Ecosystem Ecology	
FOR 447	Woody Plant Physiology	
GEOG 410	Biogeography	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
WLF 314	Ecology of Terrestrial Vertebrates	
WLF 448	Fish and Wildlife Population Ecology	
Total Hours		18-19

Courses to total 18 credits for this minor

Fire Ecology and Management (B.S.Fire.Ecol.Mgmt.)

Students must have a minimum cumulative grade-point average of 2.00 in FOR and REM courses to qualify for the B.S.Fire.Ecol.Mgmt.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
ECON 202	Principles of Microeconomics	3
ENGL 313 or ENGL 317	Business Writing Technical Writing II	3
FOR 220	Forest Biology & Dendrology	3
FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
FOR 274	Forest Measurement and Inventory	3
FIRE 326	Fire Ecology	3
FOR 375	Fundamentals of Geomatics	3
FIRE 427	Prescribed Burning Lab	3
FIRE 435	Remote Sensing of Fire	3
FIRE 450	Fire Behavior	2
FIRE 451	Fuels Inventory and Monitoring	3
FOR 484	Forest Policy and Administration	2
MATH 143 or MATH 160	College Algebra Survey of Calculus	3-4
NR 101	Exploring Natural Resources	2
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	4
FIRE 144	Wildland Fire Management	3
REM 252	Wildland Plant Identification	2
FIRE 407	GIS Application in Fire Ecology and Management	3
REM 410	Principles of Vegetation Monitoring and Measurement	3
REM 459	Rangeland Ecology	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Select one of the following:		3-4
FOR 330	Terrestrial Ecosystem Ecology	
FOR 424	Silviculture Principles and Practices	
REM 456	Integrated Rangeland Management	
Select one of the following:		4
BIOL 114	Organisms and Environments	
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
FIRE 454 or GEOL 454	Air Quality, Pollution, and Smoke Air Quality, Pollution, and Smoke	
GEOG 301	Meteorology	

Total Hours 81-83

Courses to total 120 credits for this degree

	Hours	
Fall Term 1		
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
PHYS 100	Fundamentals of Physics	3
PHYS 100L	Fundamentals of Physics Lab	1
Oral Communication Course		3
Hours		15
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
FIRE 144	Wildland Fire Management	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		16
Fall Term 2		
FOR 235	Society and Natural Resources	3
FOR 274	Forest Measurement and Inventory	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
(BIOL 115 AND BIOL 115L)		4
Hours		14
Spring Term 2		
ECON 202	Principles of Microeconomics	3
FOR 220	Forest Biology & Dendrology	3
STAT 251	Statistical Methods	3
Elective Course		3
FOR 221 OR WLF 220		3
Hours		15
Fall Term 3		
FIRE 326	Fire Ecology	3
FOR 375	Fundamentals of Geomatics	3
Elective Course		3
ENGL 313 OR ENGL 317		3
FIRE 454 OR GEOG 301		3
Hours		15
Spring Term 3		
FIRE 450	Fire Behavior	2
FIRE 451	Fuels Inventory and Monitoring	3
FOR 330 OR FOR 424 OR REM 456		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		14
Fall Term 4		
FIRE 427	Prescribed Burning Lab	3
REM 459	Rangeland Ecology	3
American Diversity Course		3
International Course		3
Elective Course		3
Elective Course		1
Hours		16
Spring Term 4		
FOR 484	Forest Policy and Administration	2
FIRE 407	GIS Application in Fire Ecology and Management	3
REM 252	Wildland Plant Identification	2
REM 410	Principles of Vegetation Monitoring and Measurement	3
Elective Course		3
Elective Course		1

FIRE 435 OR REM 429	3
Hours	17
Total Hours	122

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates will be able to conduct fuel inventory and describe fire behavior and ecological effects while using appropriate metrics and technology to make observations at multiple temporal and spatial scales, and then interpreting those observations and using them to develop scientific information for management decisions.
2. Graduates will be able to forecast potential outcomes of fire management decisions over time and space using models and other prediction tools, while considering risks and uncertainty.
3. Graduates will be able to demonstrate scientific literacy through proficiently accessing, evaluating, synthesizing, and appropriately using scientific literature, technologies, and expert advice in addressing complex natural resource management issues and applying scientific knowledge to fire management decisions.
4. Graduates will be able to demonstrate skills in working with teams of people, including effective leadership of groups working toward the common interest goal of addressing a complex resource management issue.
5. Graduates will be able to communicate effectively by listening actively, formulating, articulating, and explaining ideas clearly using oral and written techniques.

Fire Ecology and Management Minor

Code	Title	Hours
FIRE 326	Fire Ecology	3
FIRE 144	Wildland Fire Management	3
Select one of the following:		2-3
FIRE 427	Prescribed Burning Lab	
FIRE 450	Fire Behavior	
FIRE 451	Fuels Inventory and Monitoring	
Select one Ecology course from the following:		2-4
REM 429	Landscape Ecology	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
Select one Applied Tools and Technology course from the following:		3
GEOG 301	Meteorology	
GEOG 401	Climatology	
FIRE 435	Remote Sensing of Fire	
FIRE 407	GIS Application in Fire Ecology and Management	
Select two Management, Planning, and Policy courses from the following:		6
FOR 324	Forest Regeneration	
FOR 424	Silviculture Principles and Practices	
FOR 430	Forest Operations	
FOR 444	Prescribed Fire For Ecologically-Based Management	

FIRE 454	Air Quality, Pollution, and Smoke
FOR 462	Watershed Science and Management
FOR 484	Forest Policy and Administration
NRS 490	Wilderness and Protected Area Management
REM 456	Integrated Rangeland Management
Total Hours	19-22

Courses to total 20 credits for this minor, with at least 9 credits in courses numbered 400 or above.

Fire Ecology, Management and Technology Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
Fire Core:		
FIRE 526	Fire Ecology	3
FOR 546	Science Synthesis and Communication	3
FIRE 587	Wildland Fire Policy	2
Select one Ecology and Management course from the following:		2-3
FIRE 427	Prescribed Burning Lab	
FIRE 557	Advanced Fire Behavior	
REM 429	Landscape Ecology	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
REM 507	Landscape and Habitat Dynamics	
Select one Tools and Technology course from the following:		2-4
FIRE 433	Fire and Fuel Modeling	
FIRE 435	Remote Sensing of Fire	
FIRE 451	Fuels Inventory and Monitoring	
FOR 472	Remote Sensing of the Environment	
FIRE 554	Air Quality, Pollution, and Smoke	
FIRE 407	GIS Application in Fire Ecology and Management	
Select one Planning and Policy course from the following:		3
ENVS 579	Introduction to Environmental Regulations	
FOR 584	Natural Resource Policy Development	
NRS 574	Environmental Politics and Policy	
NRS 576	Environmental Project Management and Decision Making	
NRS 588	NEPA in Policy and Practice	
REM 456	Integrated Rangeland Management	
Total Hours		15-18

Courses to total 15 credits for this certificate

1. Upon completion of the Graduate Certificate in Fire Ecology, Management and Technology, students will be able to apply sound science to solve complex issues related to fire management.
2. Upon completion of the Graduate Certificate in Fire Ecology, Management and Technology, students will be able to summarize fire science and communicate effectively to managers and policy makers.

3. Upon completion of the Graduate Certificate in Fire Ecology, Management and Technology, students will understand the historical development of fire policy in the United States and how that effects contemporary fire management.

Forest and Sustainable Products (B.S.)

The Forest and Sustainable Products degree program is designed to fill the growing demand for professionals in the manufacture, marketing, and utilization of sustainable natural materials fields. Interdisciplinary coursework and project-based learning opportunities lead to a variety of career directions, including procurement of timber and other renewable materials; production management, marketing and distribution of bio-based products; green building materials selection, construction and design; and bio-based energy production systems.

Required coursework includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
ACCT 482	Enterprise Accounting	3
BIOL 102 & 102L	Biology and Society and Biology and Society Lab	4
BLAW 265	Legal Environment of Business	3
CHEM 275 or CHEM 277	Carbon Compounds Organic Chemistry I	3
COMM 101 or AGED 101	Fundamentals of Oral Communication Verbal Communication in Agriculture, Food, and Natural Resources	3
ECON 202 or ECON 272	Principles of Microeconomics Foundations of Economic Analysis	3
ENGL 313 or ENGL 317	Business Writing Technical Writing II	3
FOR 221/WLF 220	Principles of Ecology	3
NRS 235	Society and Natural Resources	3
FSP 100	Introduction to Forest and Sustainable Products	2
FSP 201	Forest and Sustainable Products for a Green Planet	3
FSP 321	Properties of Forest and Sustainable Products	3
FSP 401	Undergraduate Research	1
FSP 425	Forest Products Marketing	3
FSP 436	Biocomposites	3
FSP 438	Lignocellulosic Biomass Chemistry	1
FSP 444	Primary Forest Products Manufacturing	3
FSP 450	Biomaterials Deterioration and Protection	3
FSP 491	Biomaterial Product and Process Development Lab	2
FSP 495 or MKTG 495	Product Development and Brand Management Product Development and Brand Management	3
FSP 498	Forest and Sustainable Products Internship	1
MATH 160 or MATH 170	Survey of Calculus Calculus I	4
MKTG 321	Marketing	3
NR 101	Exploring Natural Resources	2

PHYS 111 & 111L	General Physics I and General Physics I Lab	4
STAT 251	Statistical Methods	3
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		3
MKTG 421	Marketing Research & Analysis	
MKTG 424	Pricing Strategy and Tactics	
MKTG 426	Marketing Channels Management	

Total Hours 79

Courses to total 120 credits for this degree

Fall Term 1	Hours	
COMM 101 or AGED 101	Fundamentals of Oral Communication or Verbal Communication in Agriculture, Food, and Natural Resources	3
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Hours		15
Spring Term 1	Hours	
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
ENGL 102	Writing and Rhetoric II	3
FSP 100	Introduction to Forest and Sustainable Products	2
MATH 160 OR MATH 170		4
Elective Course		2
Hours		15
Fall Term 2	Hours	
BLAW 265	Legal Environment of Business	3
FSP 201	Forest and Sustainable Products for a Green Planet	3
NRS 235	Society and Natural Resources	3
PHYS 111	General Physics I	3
PHYS 111L	General Physics I Lab	1
American Diversity Course		3
Hours		16
Spring Term 2	Hours	
FOR 221	Principles of Ecology	3
STAT 251	Statistical Methods	3
CHEM 275 OR CHEM 277		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		15
Fall Term 3	Hours	
FSP 321	Properties of Forest and Sustainable Products	3
FSP 401	Undergraduate Research	1
MKTG 321	Marketing	3
ECON 202 OR ECON 272		3
ENGL 313 OR ENGL 317		3
International Course		3
Hours		16
Spring Term 3	Hours	
FSP 498	Forest and Sustainable Products Internship	1
MKTG 421 OR MKTG 424 OR MKTG 426		3
Humanistic and Artistic Ways of Knowing Course		3

Elective Course		3
Elective Course		3
Hours		13
Fall Term 4		
FSP 425	Forest Products Marketing	3
FSP 436	Biocomposites	3
FSP 450	Biomaterials Deterioration and Protection	3
FSP 495 OR MKTG 495		3
Elective Course		3
Hours		15
Spring Term 4		
ACCT 482	Enterprise Accounting	3
FSP 438	Lignocellulosic Biomass Chemistry	1
FSP 444	Primary Forest Products Manufacturing	3
FSP 491	Biomaterial Product and Process Development Lab	2
Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates will have a sufficient academic background in forest products and allied disciplines for entry level employment within the renewable materials and allied industries or for transition to a graduate program.
2. Graduates will be able to work with teams and provide leadership to integrated groups of individuals focused toward a common goal.
3. Graduates will understand the quality assurance and quality control processes using ASTM standards when performing testing on renewable materials and products.

Forest Nursery Management and Technology (A.S.)

Required course work includes:

Code	Title	Hours
ASM 112	Introduction to Agricultural Systems Management	3
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	4
COMM 101	Fundamentals of Oral Communication	3
ECON 201 or ECON 202	Principles of Macroeconomics or Principles of Microeconomics	3
ENGL 101	Writing and Rhetoric I	3
ENGL 102	Writing and Rhetoric II	3
FOR 152	Careers in Forest Nursery Management and Technology	1
FOR 153	Forest Nurseries Tour	1
FOR 220	Forest Biology & Dendrology	3
FOR 251	Nursery Insects and Disease	2
FOR 255	Nursery Irrigation and Fertilization	1
FOR 257	Sustainable Nursery Design and Management	3

FOR 298	Forest Technology Internship	1
LARC 288	Plant Materials & Design 1	3
MATH 123 or MATH 143	Math in Modern Society or College Algebra	3
MKTG 321	Marketing	3
PLSC 102	The Science of Plants in Agriculture	3
PLSC 201	Principles of Horticulture	3
PLSC 300	Plant Propagation	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
AGEC 333 or MKTG 422	Introduction to Sales or Sales Management	3
Select 12 General Education credits of electives		12
Total Hours		68

72 required credits for this degree.

After completing the Associate of Science in Forest Nursery Management and Technology, students will:

- 1) Be able to identify forest and rangeland plants and understand how they grow in relation to abiotic components such as light, moisture, and soil nutrients.
- 2) Be able to identify and manage important insects and diseases that impact forest nurseries.
- 3) Understand and apply basic horticultural concepts and technology to manage real-world problems and solutions related to sustainable forest nursery management.
- 4) Understand and apply basic business principles and marketing practices to sustainably manage forest nurseries.

Forest Operations and Technology (A.S.)

Required course work includes:

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
ASM 409	Agricultural Tractors, Power Units and Machinery Management	4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	4
COMM 101	Fundamentals of Oral Communication	3
ECON 201 or ECON 202	Principles of Macroeconomics or Principles of Microeconomics	3
ENGL 101	Writing and Rhetoric I	3
ENGL 102	Writing and Rhetoric II	3
FOR 102	Introduction to Forest Management	2
FOR 103	Introduction to Computer Applications in Natural Resources	1
FOR 201	Industrial Forest Management and Sawmill Tour	2
FOR 210	Winter Harvesting	1
FOR 211	Logging Safety and Emergency Preparedness	2
FOR 230	Forest Operations	3

FOR 231	Low Volume Forest Roads	2
FOR 236	Cable Systems	2
FOR 272	Forest Surveying and Mapping	3
FOR 293	Business of Forestry	2
FOR 296	Forest Harvesting Practicum	3
FOR 298	Forest Technology Internship	1
FSP 100	Introduction to Forest and Sustainable Products	2
MATH 123	Math in Modern Society	3
or MATH 143	College Algebra	
MKTG 321	Marketing	3
FIRE 144	Wildland Fire Management	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
Select 12 General Education credits of electives		12
Total Hours		74

73 required credits for this degree.

After completing the Associate of Applied Science in Forest Operations and Technology, students will:

- 1) Be able to identify and describe traditional and advanced logging systems and understand considerations for feasible and safe forest operations accounting for topographic and forest conditions.
- 2) Be able to use basic computer-based applications and mobile technologies to aid the planning, execution, and assessment of forest operations.
- 3) Understand and apply safe practices, basic equipment operation and maintenance, and cost tracking for manual and mechanized forest operations in real world scenarios.
- 4) Understand the implications of the Forest Practices Act and best management practices (BMP's) for logging and forest road building activities to support sustainable forest management.
- 5) Understand basic forestry and fire management concepts to ensure effective communication with other natural resource professionals.

Forest Operations Minor

Code	Title	Hours
ACCT 201	Introduction to Financial Accounting	3
FOR 430	Forest Operations	3
FOR 431	Low Volume Forest Roads	2
FOR 436	Cable Systems	2
FSP 100	Introduction to Forest and Sustainable Products	2
FSP 321	Properties of Forest and Sustainable Products	3
FSP 444	Primary Forest Products Manufacturing	3
Total Hours		18

Courses to total 18 credits for this minor

Forest Resources Minor

Code	Title	Hours
Select 18 credits from the following courses:		18
FOR 220	Forest Biology & Dendrology	

FOR 274	Forest Measurement and Inventory
FOR 275	Forestry Resource Sampling
FOR 324	Forest Regeneration
FIRE 326	Fire Ecology
FOR 330	Terrestrial Ecosystem Ecology
FOR 375	Fundamentals of Geomatics
FOR 424	Silviculture Principles and Practices
FOR 430	Forest Operations
FOR 462	Watershed Science and Management
FOR 468	Forest and Plant Pathology
Total Hours	18

Courses to total 18 credits for this minor

Forest, Rangeland, and Fire Science (Ph.D.)

Doctor of Philosophy. Major in Natural Resources.

Candidates must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. Graduate programs are offered in many forest and rangeland specialization areas including Ecology and Biogeosciences of Forest and Rangeland Ecosystems: ecosystem processes/modeling, biometrics, biogeochemistry, hydrology and ecohydrology, remote sensing and geospatial ecology, landscape ecology, community ecology, population ecology, ecosystem ecology, disturbance ecology, paleoecology, restoration ecology, ecophysiology, global environmental change, conservation biology/genetics, and molecular plant systematic; Forest Sciences and Management: forest mensuration, forest regeneration, forest ecosystem management, tree physiology, forest pathology, forest policy, forest operations, silviculture, forest ecology, and forest genetics; Fire Sciences and Management: fire effects and recovery, fire behavior, fuels management, biophysical controls of fire and fire regimes, air quality and smoke management, fire history, and fire ecology; and Rangeland Sciences and Management: grazing behavior and management, invasive plant management, livestock-wildlife relations, rangeland and habitat management, rangeland riparian management, and rangeland ecology.

Admission to the graduate program is based on evidence of ability to complete graduate-level work as discerned from undergraduate transcripts, the applicant's statement of career objectives, and letters of recommendation; the compatibility of the student's educational and career objectives with faculty expertise and departmental objectives; and availability of graduate faculty to act as major advisor for an applicant. An undergraduate degree related to our programs is also recommended, but an applicant may be accepted with the understanding that certain course deficiencies may be required by the student's advisory committee.

Students can transfer up to 12 approved credits taken as a non-degree seeking student into a MS or PhD program in the College of Natural Resources with permission of the departmental graduate committee. Students who are considering transferring non-degree credits into a CNR graduate program should request early advising from the appropriate department.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf>)

la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F) for details and program requirements on earning the PhD in Forest, Rangeland, and Fire Science degree.

1. Students plan and conduct research or implement a project under the guidance of an advisor and/or committee while demonstrating intellectual independence.
2. Demonstrate original thought and insights to advance their discipline.
3. Develop skills in disseminating oral communication to peers in disciplinary research areas.
4. Demonstrate skills in disseminating written communication to peers in disciplinary and/or interdisciplinary research areas.
5. Demonstrate skills in disseminating and presenting complex information to non-science groups.
6. Demonstrate skills in synthesizing need of research focus to potential sponsors.

Forest, Rangeland, and Fire Sciences (M.S.)

Candidates must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. Graduate programs are offered in many forest and rangeland specialization areas including Ecology and Biogeosciences of Forest and Rangeland Ecosystems: ecosystem processes/modeling, biometrics, biogeochemistry, hydrology and ecohydrology, remote sensing and geospatial ecology, landscape ecology, community ecology, population ecology, ecosystem ecology, disturbance ecology, paleoecology, restoration ecology, ecophysiology, global environmental change, conservation biology/genetics, and molecular plant systematic; Forest Sciences and Management: forest mensuration, forest regeneration, forest ecosystem management, tree physiology, forest pathology, forest policy, forest operations, silviculture, forest ecology, and forest genetics; Fire Sciences and Management: fire effects and recovery, fire behavior, fuels management, biophysical controls of fire and fire regimes, air quality and smoke management, fire history, and fire ecology; and Rangeland Sciences and Management: grazing behavior and management, invasive plant management, livestock-wildlife relations, rangeland and habitat management, rangeland riparian management, and rangeland ecology.

Admission to the graduate program is based on evidence of ability to complete graduate-level work as discerned from undergraduate transcripts, the applicant's statement of career objectives, and letters of recommendation; the compatibility of the student's educational and career objectives with faculty expertise and departmental objectives; and availability of graduate faculty to act as major advisor for an applicant. An undergraduate degree related to our programs is also recommended, but an applicant may be accepted with the understanding that certain course deficiencies may be required by the student's advisory committee.

Students can transfer up to 12 approved credits taken as a non-degree seeking student into a MS or PhD program in the College of Natural Resources with permission of the departmental graduate committee. Students who are considering transferring non-degree credits into a CNR graduate program should request early advising from the appropriate department.

Master of Science. Major in Natural Resources.

The MS degree is available with a major in natural resources. Thesis and non-thesis options are offered.

1. Thesis option: General M.S. requirements apply. However, the thesis may be comprised of a manuscript(s) in a form acceptable for publication in a refereed journal, while otherwise fulfilling format requirements of the Graduate College.
2. Non-thesis option: General M.S. requirements apply. A written and/or oral examination that covers graduate coursework must be taken during the final semester in residence. At least one professional paper is required and will be evaluated by the candidate's supervisory committee.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the Master's in Forest, Rangeland, and Fire Sciences degree.

1. Demonstrate understanding of the scientific method and qualitative/quantitative analysis methods.
2. Critically synthesize existing knowledge in science and their natural resource discipline and describe how their research represents a step forward towards the generation of new knowledge.
3. Critically apply theories, methodologies, and knowledge to address important questions in natural resources.
4. Conduct research of significance in a natural resource discipline or as part of a disciplinary or an interdisciplinary or creative project.
5. Plan and conduct this research or implement this project under the guidance of an advisor and/or committee while developing intellectual independence.
6. Develop potential ability in disseminating oral communication to peers in disciplinary research areas.
7. Develop potential ability in disseminating written communication to peers in disciplinary and/or interdisciplinary research areas.
8. Develop potential ability in disseminating and presenting complex information to non-science groups.
9. Develop potential expertise in a specialized research area in natural resources.
10. Demonstrate self-defined pathway for career following defense.
11. Develop potential ability for leadership in natural resource discipline.
12. Interact productively with people from diverse backgrounds and team members with integrity and professionalism.
13. Develop potential ability, through service, for the value of their discipline to the academy and community at large.
14. Follow the principles of ethics in their field and in academia.

Forestry (B.S.Forestry)

Students must have a minimum cumulative grade-point average of 2.00 in FOR courses to qualify for the B.S.Forestry.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
BIOL 114	Organisms and Environments	4
ECON 202	Principles of Microeconomics	3
ENT 469	Introduction to Forest Insects	2
FOR 102	Introduction to Forest Management	2
FOR 220	Forest Biology & Dendrology	3
FOR 221	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
FOR 274	Forest Measurement and Inventory	3
FOR 275	Forestry Resource Sampling	2
FOR 324	Forest Regeneration	3
FOR 330	Terrestrial Ecosystem Ecology	4
FOR 375	Fundamentals of Geomatics	3
FOR 424	Silviculture Principles and Practices	4
FOR 430	Forest Operations	3
FOR 462	Watershed Science and Management	3
FOR 468	Forest and Plant Pathology	2
FOR 484	Forest Policy and Administration	2
FOR 493	Business of Forestry	2
MATH 143	College Algebra ¹	3
MATH 144	Analytic Trigonometry ¹	1
NR 101	Exploring Natural Resources	2
NRS 383	Natural Resource and Ecosystem Service Economics	3
FIRE 144	Wildland Fire Management	3
or FIRE 326	Fire Ecology	
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
Select one of the following:		4
PHYS 100 & 100L	Fundamentals of Physics and Fundamentals of Physics Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
Emphasis		
Select one of the following emphases:		
General Forestry Emphasis		
Forest Operations Emphasis		
Forest Biology Emphasis		
Forest Hydrology & Watershed Management Emphasis		
Total Hours		78

A. General Forestry Emphasis

Code	Title	Hours
Select 18 credits of electives at or above the 300-level		18
Total Hours		18

B. Forest Operations Emphasis

Code	Title	Hours
FOR 431	Low Volume Forest Roads	2
FOR 436	Cable Systems	2
FSP 100	Introduction to Forest and Sustainable Products	2
FSP 321	Properties of Forest and Sustainable Products	3
FSP 444	Primary Forest Products Manufacturing	3
ACCT 201	Introduction to Financial Accounting	3
Total Hours		15

C. Forest Biology Emphasis

Code	Title	Hours
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 213	Structure and Function Across the Tree of Life	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 275	Carbon Compounds	3
or CHEM 277	Organic Chemistry I	
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
WLF 370	Management and Communication of Scientific Data	3
Select two courses from the following list:		6
BIOL 314	Ecology and Population Biology	
FOR 443	Forest Production Ecology	
GEOG 313	Global Climate Change	
GEOG 410	Biogeography	
GEOG 430	Climate Change Ecology	
REM 440	Restoration Ecology	
WLF 440	Conservation Biology	
Total Hours		29

D. Forest Hydrology & Watershed Management Emphasis

Code	Title	Hours
GEOL 111	Physical Geology for Science Majors	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 112 & 112L	General Physics II and General Physics II Lab	4
STAT 301	Probability and Statistics	3
Select one course from the following:		3-4
FISH 415	Limnology	
FISH 430	Riparian and River Ecology	
Select two courses from the following:		6
GEOG 385	Foundations of GIS	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
GEOG 475	Intermediate GIS	
GEOG 479	GIS Programming	
Select two courses from the following:		6
GEOG 301	Meteorology	
GEOL 309	Ground Water Hydrology	
HYDR 409	Quantitative Hydrogeology	

SOIL 415	Soil and Environmental Physics	
SOIL 450	Environmental Hydrology	
SOIL 452	Environmental Water Quality	
Total Hours		33-34

Courses to total 120 credits for this degree

1

A SAT math score of 610 or above, or ACT math score of 27 or above, can be used to satisfy the MATH 143 and MATH 144 requirements.

Fall Term 1		Hours
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
FOR 102	Introduction to Forest Management	2
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
NR 101	Exploring Natural Resources	2
Hours		15

Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
FOR 235	Society and Natural Resources	3
Oral Communication Course		3
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
FIRE 326 OR FIRE 144		3
Hours		16

Fall Term 2		Hours
FOR 274	Forest Measurement and Inventory	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
(PHYS 100 AND PHYS 100L) OR (PHYS 111 AND PHYS 111L)		4
Hours		14

Spring Term 2		Hours
ECON 202	Principles of Microeconomics	3
FOR 221	Principles of Ecology	3
FOR 275	Forestry Resource Sampling	2
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Hours		14

Fall Term 3		Hours
FOR 220	Forest Biology & Dendrology	3
FOR 375	Fundamentals of Geomatics	3
International Course		3
Emphasis Area, Major Elective Course		3
Elective Course		3
Hours		15

Spring Term 3		Hours
FOR 324	Forest Regeneration	3
FOR 330	Terrestrial Ecosystem Ecology	4
NRS 383	Natural Resource and Ecosystem Service Economics	3
Humanistic and Artistic Ways of Knowing Course		3
Emphasis Area, Major Elective Course		3
Hours		16

Fall Term 4		Hours
FOR 424	Silviculture Principles and Practices	4
FOR 430	Forest Operations	3
FOR 493	Business of Forestry	2
Emphasis Area, Major Elective Course		3
Emphasis Area, Major Elective Course		3
Hours		15

Spring Term 4		
ENT 469	Introduction to Forest Insects	2
FOR 468	Forest and Plant Pathology	2
FOR 484	Forest Policy and Administration	2
FOR 462	Watershed Science and Management	3
Emphasis Area, Major Elective Course		3
Emphasis Area, Major Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates will be able to conduct forest resource inventories and perform field measurements of forest ecosystems, providing the foundation for making science-based management decisions.
2. Graduates will be able to think critically, and will have the skills to develop, evaluate, synthesize, and apply scientific knowledge (i.e., biological, physical, and socioeconomic) from a variety of sources (i.e., scientific literature, technologies, and expert advice) to evaluate and justify forest management decisions and management alternatives.
3. Graduates will be able to communicate plans and decisions effectively in light of existing policies and laws by listening actively, formulating, articulating, and explaining ideas clearly using both oral and written techniques.
4. Graduates will be able to work effectively as an individual and collaboratively with teams of people, including effective leadership of groups working toward a common goal.

Natural Resource Management Undergraduate Academic Certificate

To complete the certificate, students must take a total of 24 credits from the courses listed in the program of study. All coursework must be completed with a grade of "C" or better. With CNR certificate committee approval, students may transfer up to six credits of coursework from another institution to count towards their certificate program.

Code	Title	Hours
Select 24 credits from the following courses:		24
REM 151	Rangeland Principles	
FOR 221	Principles of Ecology	
REM 252	Wildland Plant Identification	
REM 253	Wildland Plant Identification Field Studies	
REM 280	Introduction to Wildland Restoration	
GEOG 385	Foundations of GIS	
REM 341	Systematic Botany	
ENVS 450	Environmental Hydrology	
ENVS 485	Energy Efficiency and Conservation	
FISH 415	Limnology	
FIRE 451	Fuels Inventory and Monitoring	
FIRE 454	Air Quality, Pollution, and Smoke	

FOR 484	Forest Policy and Administration
FIRE 407	GIS Application in Fire Ecology and Management
REM 410	Principles of Vegetation Monitoring and Measurement
REM 411	Wildland Habitat Ecology and Assessment
REM 429	Landscape Ecology
REM 440	Restoration Ecology
REM 456	Integrated Rangeland Management
REM 459	Rangeland Ecology
WLF 440	Conservation Biology
Total Hours	24

Courses to total 24 credits for this certificate.

Students that complete the Natural Resource Management certificate should be able to integrate technical “field” knowledge with analytical skills to solve important natural resource management problems.

Specifically, students should be able to:

1. Describe ecological processes, including human impacts that influence ecosystem change, and the future sustainability of natural resources.
2. Characterize natural resources and be familiar with methods to quantify at least one of these resources.
3. Identify desired future conditions to achieve natural resource-related objectives, prescribe management actions needed to achieve those objectives, and evaluate success of prescribed actions.

Rangeland Ecology and Management (B.S.)

This major prepares students to conserve, restore, and manage the vast landscapes known as rangelands. These ecosystems include deserts, prairies, shrublands, and woodlands. The degree program focuses on the scientific study of rangelands and introduces principles for managing and restoring rangelands for maximum benefit and ecosystem sustainability.

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
First and Second Years		
AVS 109	The Science of Animals that Serve Humanity	3-4
or AVS 110	Science of Animal Husbandry	
BIOL 114	Organisms and Environments	3-4
or BIOL 115	Cells and the Evolution of Life	
BIOL 213	Structure and Function Across the Tree of Life	4
or PLSC 205	General Botany	
COMM 101	Fundamentals of Oral Communication	3
or AGED 101	Verbal Communication in Agriculture, Food, and Natural Resources	
ECON 202	Principles of Microeconomics	3
FOR 221/ WLF 220	Principles of Ecology	3
FOR 235	Society and Natural Resources	3
MATH 143	College Algebra	3-4
or MATH 160	Survey of Calculus	

NR 101	Exploring Natural Resources	2
REM 151	Rangeland Principles	3
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
STAT 251	Statistical Methods	3
REM 252	Wildland Plant Identification	2
REM 253	Wildland Plant Identification Field Studies	1
Select one of the following:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	

Third and Fourth Years

ENGL 313	Business Writing	3
or ENGL 317	Technical Writing II	
or ENGL 318	Science Writing	
or WLF 370	Management and Communication of Scientific Data	
FISH 430	Riparian and River Ecology	3
or FOR 462	Watershed Science and Management	
FOR 375	Fundamentals of Geomatics	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
or AGECE 451	Applied Environmental and Natural Resource Economics	
REM 341	Systematic Botany	3
REM 410	Principles of Vegetation Monitoring and Measurement	2
REM 456	Integrated Rangeland Management	3
REM 459	Rangeland Ecology	3
REM 460	Integrated Field Studies in Rangelands	1
SOIL 454	Pedology	3
Select one of the following:		3-4
REM 280 & PLSC 419	Introduction to Wildland Restoration and Plant Community Restoration Methods	
REM 440	Restoration Ecology	
Career Track courses with Advisor Input and Approval (see below)		15
Total Hours		89-93

Students must complete 15 credits of advisor-approved electives contributing to a specific career track that may include:

RESTORATION ECOLOGY: Millions of acres of rangeland and forests have been disturbed by fire, invasive plants, and overgrazing. Academic advisors in rangeland conservation have developed a set of electives for students interested in a career in wildland restoration. Completing these career track electives will fulfill requirements for the Restoration Ecology Undergraduate Academic Certificate. Careful selection of courses can also highlight expertise in botany and plant materials to qualify for professions as a botanist.

WILDLIFE HABITAT: Many species of wildlife live on rangelands, and the management of wildlife habitat is an important and sought after skill. With help from their academic advisor, rangeland students can complete a career track that will show expertise in wildlife habitat management and fulfill the requirements for a Minor in Wildlife Resources.

LAND AND LIVESTOCK: This career track is for students interested in hands-on management of rangelands. Academic advisors work with students to select courses that provide the knowledge and skills needed to manage rangelands with grazing and fire to enhance livestock production while sustaining communities of native plants and animals. Completion of these courses can also satisfy the requirements for a Minor in Animal Science or Soil Science.

WILDLAND FIRE: Wildfire is one of the major forces causing change on rangeland ecosystems. Completing a specific set of advisor-approved electives will enable students to show knowledge of land management related to wildland fire and fulfill the requirements for a Minor in Fire Ecology and Management.

INDIVIDUAL INTEREST: Students can work with their advisor to select specific courses to show expertise in a career track of specific interest that may include Watershed or Riparian Ecologist, Natural Resource GIS Specialist, Environmental Consultant, Tribal Land Manager, Resource Economist, or many other interests related to rangelands.

Courses to total 120 credits for this degree

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
NR 101	Exploring Natural Resources	2
REM 151	Rangeland Principles	3
AVS 109 OR AVS 110		3
MATH 143 OR MATH 160		3
Hours		14
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
REM 252	Wildland Plant Identification	2
REM 253	Wildland Plant Identification Field Studies	1
(CHEM 101 AND CHEM 101L) OR (CHEM 111 AND CHEM 111L)		4
Elective Course		3
Elective Course		2
Hours		15
Fall Term 2		Hours
COMM 101 or AGED 101	Fundamentals of Oral Communication or Verbal Communication in Agriculture, Food, and Natural Resources	3
ECON 202	Principles of Microeconomics	3
FOR 235	Society and Natural Resources	3
STAT 251	Statistical Methods	3
BIOL 114 OR BIOL 115		4
Hours		16
Spring Term 2		Hours
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Elective Course		1
FOR 221 OR NR 321		3
BIOL 213 OR PLSC 205		4
Hours		14
Fall Term 3		Hours
FOR 375	Fundamentals of Geomatics	3
REM 410	Principles of Vegetation Monitoring and Measurement	2
SOIL 205	The Soil Ecosystem	3
SOIL 206	The Soil Ecosystem Lab	1
Elective Course		3
ENGL 313 OR ENGL 317 OR ENGL 318 OR WLF 370		3
Hours		15

Spring Term 3		
NRS 383 or AGECE 451	Natural Resource and Ecosystem Service Economics or Applied Environmental and Natural Resource Economics	3
REM 341	Systematic Botany	3
Humanistic and Artistic Ways of Knowing Course		3
Career Track, Major Elective Course		3
(PLSC 419 AND REM 280)		3
Hours		15
Fall Term 4		
REM 459	Rangeland Ecology	3
REM 460	Integrated Field Studies in Rangelands	1
SOIL 454	Pedology	3
International Course		3
Career Track, Major Elective Course		3
Career Track, Major Elective Course		3
Hours		16
Spring Term 4		
REM 456	Integrated Rangeland Management	3
American Diversity Course		3
Career Track, Major Elective Course		3
Career Track, Major Elective Course		3
FISH 430 OR FOR 462		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Graduates will be able to implement effective planning and problem-solving approaches individually and in teams that consider economic, social, and ecological impacts of rangeland projects and plans.
2. Graduates will be able to use spatial tools (including maps, GPS, GIS, and remote sensing) to observe and interpret ecosystems and aid in making management decisions.
3. Graduates will be proficient with rangeland inventories and perform field measurements of upland and riparian habitats in shrublands, grasslands, woodlands, and deserts.
4. Graduates will be able to effectively communicate plans and decisions in light of existing policies and laws.
5. Graduates demonstrate a sound understanding of science and the application of the scientific method to addressing natural resource questions.

Rangeland Ecology and Management Minor

Code	Title	Hours
REM 151	Rangeland Principles	3
REM 252	Wildland Plant Identification	2
or REM 341	Systematic Botany	
REM 456	Integrated Rangeland Management	3
REM 459	Rangeland Ecology	3

Select 3-4 credits from the following: 3-4

REM 410	Principles of Vegetation Monitoring and Measurement
REM 411	Wildland Habitat Ecology and Assessment
REM 440	Restoration Ecology
Select two courses from the following (or a course not chosen above) 5-7	
AVS 474	Beef Cattle Science
AVS 476	Sheep Science
FISH 430	Riparian and River Ecology
FIRE 326	Fire Ecology
FOR 462	Watershed Science and Management
PLSC 338	Organic and Conventional Weed Management
PLSC 410	Invasive Plant Biology
REM 429	Landscape Ecology
SOIL 438	Pesticides in the Environment
SOIL 454	Pedology
WLF 314	Ecology of Terrestrial Vertebrates
WLF 440	Conservation Biology

Total Hours 19-22

Courses to total 18 credits for this minor

Renewable Materials Minor

This minor is optimal for students in business, engineering, forestry, or vocational education who wish to gain specific background and knowledge related to the forest products industry.

Code	Title	Hours
FOR 430	Forest Operations	3
FSP 321	Properties of Forest and Sustainable Products	3
FSP 444	Primary Forest Products Manufacturing	3
Select 9 credits of electives in Forest and Sustainable Products (FSP)		9

Total Hours 18

Courses to total 18 credits for this minor

Restoration Ecology Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
FOR 221/ WLF 220	Principles of Ecology	3
REM 280	Introduction to Wildland Restoration	2
REM 440	Restoration Ecology	3
REM 459	Rangeland Ecology	3
SOIL 205	The Soil Ecosystem	3
Select one of the following:		2-3
FOR 324	Forest Regeneration	
FIRE 326	Fire Ecology	
FIRE 454	Air Quality, Pollution, and Smoke	
FIRE 451	Fuels Inventory and Monitoring	
LARC 480	The Resilient Landscape	

PLSC 338	Organic and Conventional Weed Management
PLSC 410	Invasive Plant Biology
PLSC 419	Plant Community Restoration Methods
FIRE 407	GIS Application in Fire Ecology and Management
REM 429	Landscape Ecology
SOIL 438	Pesticides in the Environment
SOIL 454	Pedology
WLF 440	Conservation Biology

Total Hours 16-17

Courses to total 16 credits for this certificate

Wildland Fuel and Fire Technology (A.S.)

Required course work includes:

Code	Title	Hours
COMM 101	Fundamentals of Oral Communication	3
ENGL 101	Writing and Rhetoric I	3
ENGL 102	Writing and Rhetoric II	3
FOR 102	Introduction to Forest Management	2
FOR 103	Introduction to Computer Applications in Natural Resources	1
FIRE 111	Saws and Pumps	1
FIRE 145	Career in Fire and Fuels	2
FIRE 202	Leadership and Decision-Making in Fire Management	3
FIRE 213	Vegetation Management	3
FIRE 226	Wildland-Urban Interface Assessment and Communication	3
FIRE 253	Introduction to Fuels Inventory and Sampling	2
FIRE 254	Fire Environment	3
FIRE 256	Science Synthesis in Fire Ecology and Management	1
FIRE 261	Fire Technology	3
FIRE 284	Fire Policy and Administration	3
FIRE 290	Medical Response and Stress Management in Natural Resources	3
FIRE 321	Cultural Use of Fire	3
FIRE 323	Communication and Facilitative Instruction in Fire Management	2
MATH 123	Math in Modern Society	3
or MATH 143	College Algebra	
PHIL 201	Critical Thinking	3
FIRE 142	Introduction to Wildland Fire Management	2
REM 151	Rangeland Principles	3
FIRE 210	Introduction to Fire Effects and Management	2
FIRE 298	Wildland Fuels and Fire Internship	1
SOC 101	Introduction to Sociology	3
Select 20 credits of General Education electives		20

Total Hours 81

Total credits for required for this degree: 81

After completing the Applied Associate of Science in Wildland Fuel and Fire Technology, students will be able to:

1. Identify the primary factors associated with the start, spread, and management of wildfires and prescribed fires in forests and rangelands.
2. Demonstrate the proper application of fuel measurement techniques and be able complete fuel assessments in forest, rangelands, and the wildland-urban interface.
3. Demonstrate the proper use of fire equipment and fire suppression and prescribed fire techniques.
4. Effectively synthesize and communicate fire and fuels management information to the public.
5. Demonstrate an ability to measure fire effects.
6. Demonstrate ability to assume leadership roles in fire and fuels management.
7. Identify cultural uses, programmatic structures, policies, and administration in fuels and fire management.

Department of Natural Resources

Dennis Becker, Dean; Steven R. Shook, Associate Dean; (202 College of Natural Resources Bldg.; 208-885-6442).

With approximately 90 percent of its area in forest and range lands and a wealth of water resources, Idaho offers excellent opportunities for undergraduate and graduate study in all disciplines related to management of renewable resources of wildlands. The college has its own research organization—the Forest, Wildlife and Range Experiment Station—which includes the Idaho Cooperative Fish and Wildlife Research Unit and the Cooperative Park Studies Unit. All faculty members have teaching responsibilities in the college as well as research responsibilities in the experiment station. Additional facilities include the Taylor Wilderness Research Station in the Frank Church River of No Return Wilderness Area; the Experimental Forest near Moscow; the Lee A. Sharp Experimental Area near Burley, Idaho; the McCall Field Campus in central Idaho; and the USDA Rocky Mountain Research Station and Forestry Sciences Laboratory in Moscow.

Admission for graduate study normally requires completion of course work equivalent to that required in one of the undergraduate curricula offered by the college. Students with differing backgrounds but substantial preparation in the sciences may also be admitted. The study plans developed will allow for differences in preparation while providing all students with comparable backgrounds by the time the graduate program is completed.

Minors

- Natural Resources Minor (p. 435)

Natural Resources Graduate Program

Candidate must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Natural Resources (M.S.) (p. 435)
- Natural Resources (M.N.R.) (p. 430)
- Natural Resources (Ph.D.) (p. 435)

Natural Resources (M.N.R.)

The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for current and aspiring professionals who wish to enhance their educational credentials for a career in natural resources. The fundamental objective of the MNR graduate program is to integrate and scale various perspectives — ecology and management; planning, policy and society; and tools and technology — into a systems-view of natural resources. This unique professional degree is accessible to students of diverse academic backgrounds and will help graduates develop credentials and skills for the effective management of natural resources. The degree program can be completed entirely online or through a combination of online and on-campus courses. The MNR program can be combined with the certificate program specializing in fire ecology, management and technology. The five MNR degree specializations are:

- Environmental Education and Science Communication
- Fire Ecology and Management
- Fish and Wildlife Science and Management
- Integrated Natural Resources
- Restoration Ecology and Habitat Management

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the Master of Natural Resources degree.

Master of Natural Resources. Major in Natural Resources. Integrated Natural Resources Option.

The Integrated Natural Resources Option of the MNR covers a breadth of natural resource science and management subjects. The program provides knowledge and skills to support holistic, integrated approaches to careers in natural resources. The Integrated Natural Resources Option of the MNR consists of 30 semester credits (at least 7 credits from each of three MNR program categories—Ecology and Management; Policy, Planning, and Society; and Tools and Technology—plus 0-7 elective courses and 2 credits for a final project/portfolio) to total 30 credits. Up to 12 semester credits can be transferred into the program from other institutions. Coursework must include a minimum of 18 credits numbered 500 or above.

Admission to the College of Graduate Studies requires a minimum 3.0 GPA, three letters of reference, and a statement of purpose.

Complete admission and degree information is available online at: <http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources>. (<http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources/>)

Code	Title	Hours
Select a minimum of 7 credits from each of the three categories below:		21
Ecology and Management:		

BE 450	Environmental Hydrology
ENVS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total.)
FISH 415	Limnology
FISH 515	Large River Fisheries
FISH 525	Aquaculture in Relation to Wild Fish Populations
FISH 526	Climate Effects & Cons Manage
FISH 540	Wetland Restoration
FOR 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total.)
FOR/ENVS/ REM/WLF 504	Special Topics
FIRE 526	Fire Ecology
FOR 410	Fire Effects and Management
REM 440	Restoration Ecology
REM 456	Integrated Rangeland Management
REM 459	Rangeland Ecology
REM 507	Landscape and Habitat Dynamics ¹
WLF 440	Conservation Biology
WLF 506	External Speakers
Policy, Planning, and Society:	
ENVS 520	Introduction to Bioregional Planning
ENVS 523	Planning Sustainable Places
ENVS 530	Planning Theory and Process
ENVS/FS 536	Principles of Sustainability
ENVS 551	Research Methods in the Environmental Social Sciences
ENVS 552	Environmental Philosophy
ENVS 577	Law, Ethics, and the Environment
ENVS 579	Introduction to Environmental Regulations
FOR 546	Science Synthesis and Communication
FIRE 554	Air Quality, Pollution, and Smoke ²
FOR 584	Natural Resource Policy Development
FIRE 587	Wildland Fire Policy
NRS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total.)
NRS 504	Special Topics
NRS 507	Moral Reasoning in Natural Resources
NRS 555	Human Dimensions of Natural Resources
NRS 574	Environmental Politics and Policy
NRS 576	Environmental Project Management and Decision Making
SOIL 544	Water Quality in the Pacific Northwest
Tools and Technology:	
FIRE 451	Fuels Inventory and Monitoring
GEOG 524	Hydrologic Applications of GIS and Remote Sensing
NRS 578	LIDAR and Optical Remote Sensing Analysis
NRS 580	Restoration Ecology Practicum
NRS 592	Emerging Media Outreach in Natural Resources
FIRE 407	GIS Application in Fire Ecology and Management
REM 507	Landscape and Habitat Dynamics

REM 520	Advanced Vegetation Measurement and Monitoring
SOIL 544	Water Quality in the Pacific Northwest
WLF 540	Conservation Genetics
WLF 561	Landscape Genetics
Elective Courses:	
ENVS/FOR/ NRS/WLF 504	Special Topics
-OR- any additional courses listed above -OR- advisor-approved electives to bring total to 30 credits	
Final Portfolio:	
NR 599	Non-thesis Master's Research
Total Hours	24-30

Courses to total 30 credits for this degree

1

REM 507 (Landscape and Habitat Dynamics) can be used to contribute to either the Ecology and Management requirement -OR- the Tools and Technology requirement (but not both).

2

FIRE 554 (Air Quality, Pollution, and Smoke) can be used to contribute to either the Policy, Planning, and Society requirement -OR- the Tools and Technology requirement (but not both).

Master of Natural Resources. Major in Natural Resources. Environmental Education and Science Communication Option

Code	Title	Hours
NRS 501	Seminar (NRS 504-90 ST: Intro Ecol Data Analysis is optional)	2
Ecology and Management		8
NRS 560	Place-based Ecology I	
NRS 566	Place-based Ecology II	
Human Dimensions		6
NRS 556	Team Leadership for Environmental Educators	
NRS 565	Science Communication and the Environment	
Policy Planning and Law		6
NRS 557	Community Leadership for Environmental Educators	
NRS 563	Place Based Env. Education	
NRS 568	Environmental Education Teaching Practicum II	
Tools and Technology		6
NRS 562	Field Science Teaching	
NRS 564	Teaching Environmental Education in a Winter Environment	
NRS 567	Environmental Education Teaching Practicum I	
Case Study Project		4
NRS 599	Non-thesis Master's Research	
NRS 569	Environmental Education Teaching Practicum III	
Total Hours		32

Courses to total 32 credits for this degree

Master of Natural Resources. Major in Natural Resources. Fire Ecology and Management Option.

The Fire Ecology and Management Option provides depth to address wildfire management challenges facing society. Completing this option will help students advance their professional careers in wildland fire management, fuels management, and restoration by advancing knowledge of fire science, ecology, fire-related policy and social issues, and the latest tools and technology. The option also reinforces fundamentals in applied ecology, natural resources management, communications, and other career-advancing knowledge and skills.

The Fire Ecology and Management Option of the MNR consists of 30 semester credits (14 credits of Core Courses; 2-3 credits of Ecology; 4 credits of Tools and Technology; 6 credits of Policy, Planning, and Society; 2 credits of electives; and 2 credits of non-thesis research for a final project or portfolio). Up to 12 semester credits can be transferred into the program from other institutions. Admission to the College of Graduate Studies requires a minimum 3.0 GPA, three letters of reference, and a statement of purpose. Coursework must include a minimum of 18 credits numbered 500 or above.

Complete admissions and degree information is available online at: <http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources>. (<http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources/>)

Code	Title	Hours
Fire Science and Management Core		14
FIRE 451	Fuels Inventory and Monitoring	
FIRE 526	Fire Ecology	
FOR 546	Science Synthesis and Communication	
FIRE 557	Advanced Fire Behavior	
FIRE 587	Wildland Fire Policy	
Ecology and Management		3
FISH 526	Climate Effects & Cons Manage	
FISH 540	Wetland Restoration	
FOR 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total.)	
FOR/REM/ENVS/WLF 504	Special Topics	
REM 440	Restoration Ecology	
REM 459	Rangeland Ecology	
REM 507	Landscape and Habitat Dynamics ¹	
WLF 440	Conservation Biology	
FOR 410	Fire Effects and Management	
WLF 506	External Speakers	
Tools and Technology		4
ENVS 551	Research Methods in the Environmental Social Sciences	
FIRE 454	Air Quality, Pollution, and Smoke	
NRS 578	LIDAR and Optical Remote Sensing Analysis	
NRS 580	Restoration Ecology Practicum	
FIRE 407	GIS Application in Fire Ecology and Management	

REM 507	Landscape and Habitat Dynamics ¹	
REM 520	Advanced Vegetation Measurement and Monitoring	
Policy, Planning, and Society		6
ENVS 523	Planning Sustainable Places	
ENVS 530	Planning Theory and Process	
ENVS 577	Law, Ethics, and the Environment	
FIRE 554/454	Air Quality, Pollution, and Smoke ²	
FOR 584	Natural Resource Policy Development	
FS 536	Principles of Sustainability	
	or ENVS 536 Principles of Sustainability	
NRS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total.)	
NRS 504	Special Topics	
NRS 507	Moral Reasoning in Natural Resources	
NRS 555	Human Dimensions of Natural Resources	
NRS 574	Environmental Politics and Policy	
NRS 576	Environmental Project Management and Decision Making	
NRS 588	NEPA in Policy and Practice	
Final Project		2
NR 599	Non-thesis Master's Research	
Elective Courses:		1
ENVS/FOR/NRS 501	Seminar (A maximum of 2 credits of seminar can be used towards the 30 credit total.)	
ENVS/FOR/NRS/REM/WLF 504	Special Topics	
WLF 506	External Speakers	
-OR- any additional courses listed above -OR- advisor-approved electives to bring total to 30 credits		
Total Hours		30

Courses to total 30 credits for this degree

1

REM 507 (Landscape and Habitat Dynamics) can be used for either the Ecology and Management requirement -OR- the Tools and Technology requirement (but not both).

2

FIRE 454 or FIRE 554 (Air Quality, Pollution, and Smoke) can be used to contribute to either the Policy, Planning and Society requirement -OR- the Tools and Technology requirement (but not both).

Master of Natural Resources. Major in Natural Resources. Restoration Ecology and Habitat Management Option.

Complete admissions and degree information is available online at <http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources> (<http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources/>).

Code	Title	Hours
Restoration Ecology and Habitat Management Core:		
ENVS 579	Introduction to Environmental Regulations	3

or NRS 588	NEPA in Policy and Practice	
FISH 540	Wetland Restoration	3
NR 599	Non-thesis Master's Research	2
NRS 580	Restoration Ecology Practicum	2
REM 440	Restoration Ecology	3
REM 507 or REM 429	Landscape and Habitat Dynamics Landscape Ecology	3
Ecology and Management (choose two courses):		5-6
FISH 515	Large River Fisheries	
FISH 525	Aquaculture in Relation to Wild Fish Populations	
FOR 410	Fire Effects and Management	
FIRE 526	Fire Ecology	
REM 429	Landscape Ecology (if not taken in the Core)	
REM 456	Integrated Rangeland Management	
REM 459	Rangeland Ecology	
SOIL 422	Environmental Soil Chemistry	
SOIL 446	Soil Fertility	
SOIL 544	Water Quality in the Pacific Northwest	
WLF 440	Conservation Biology	
Tools and Technology (choose 3 credits):		3
ENVS 450	Environmental Hydrology	
FIRE 451	Fuels Inventory and Monitoring	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
NRS 578	LIDAR and Optical Remote Sensing Analysis	
PLSC 419	Plant Community Restoration Methods	
FIRE 407	GIS Application in Fire Ecology and Management	
REM 410 or REM 520	Principles of Vegetation Monitoring and Measurement Advanced Vegetation Measurement and Monitoring	
WLF 540	Conservation Genetics	
WLF 561	Landscape Genetics	
Policy, Planning, and Society (choose two courses):		5-6
BIOP 523	Planning Sustainable Places	
ENVS 548	Drinking Water and Human Health	
ENVS 579	Introduction to Environmental Regulations	
FOR 584	Natural Resource Policy Development	
FS 536	Principles of Sustainability	
NRS 507	Moral Reasoning in Natural Resources	
NRS 576	Environmental Project Management and Decision Making	
NRS 588	NEPA in Policy and Practice	
Additional elective graduate credits to total a minimum of 30 credits		
Total Hours		29-31

Courses to total 30 credits for this degree

Master of Natural Resources. Major in Natural Resources. Fish and Wildlife Science and Management Option.

All listed courses are available online. Additional courses are available for on-campus students and could be substituted for some of the courses below with advisor permission.

18 credits must be from 500 level courses.

Complete admissions and degree information is available online at <http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources> (<http://www.uidaho.edu/cnr/grad-programs/online-degrees/master-of-natural-resources/>).

Code	Title	Hours
<i>Core courses (11 credits)</i>		
NRS 555	Human Dimensions of Natural Resources	3
FISH 598 & NR 599 or FISH 502	Internship and Non-thesis Master's Research Directed Study	4
FOR 546	Science Synthesis and Communication	3
WLF 506	External Speakers	1
Select 8 credits of Fish & Wildlife Science Courses:		8
FISH 411	Fish Physiology	
FISH 415	Limnology	
FISH 525	Aquaculture in Relation to Wild Fish Populations	
FISH 526	Climate Effects & Cons Manage	
FISH 515	Large River Fisheries	
FISH 511	Fish Physiology	
FISH 540	Wetland Restoration	
FISH 550	Ecology & Conservation of Freshwater Invertebrates	
FISH 551	Freshwater Invertebrate Field Methods	
REM 411	Wildland Habitat Ecology and Assessment	
WLF 440	Conservation Biology	
WLF 530	Riparian Ecology	
WLF 540	Conservation Genetics	
WLF 545	Wildlife Habitat Ecology	
WLF 561	Landscape Genetics	
WLF 562	Landscape Genetics Lab	
WLF 575	Behavioral Ecology	
Select one course in Quantitative & Statistical Methods:		2-3
STAT 419	Introduction to SAS/R Programming	
STAT 422	Survey Sampling Methods	
STAT 431	Statistical Analysis	
WLF 550	Quantitative Analysis of Fish and Wildlife Populations	
WLF 552	Ecological Modeling	
WLF 551	Applied Mixed Effects Modeling	
Select one course in Policy, Planning & Society:		2-3
BIOP 523	Planning Sustainable Places	
BIOP 520	Introduction to Bioregional Planning	
BIOP 530	Planning Theory and Process	
ENVS 577	Law, Ethics, and the Environment	

ENVS 579	Introduction to Environmental Regulations
FOR 584	Natural Resource Policy Development
FIRE 587	Wildland Fire Policy
NRS 475	Local and Regional Environmental Planning
NRS 574	Environmental Politics and Policy
NRS 576	Environmental Project Management and Decision Making
NRS 588	NEPA in Policy and Practice
Electives from below -OR- any additional courses listed above to total 4-6 30 credits:	
WLF 503	Workshop
BE/ENVS 450	Environmental Hydrology
FIRE 451	Fuels Inventory and Monitoring
FIRE 526	Fire Ecology
FIRE 554	Air Quality, Pollution, and Smoke
GEOG 524	Hydrologic Applications of GIS and Remote Sensing
NRS/REM 440	Restoration Ecology
NRS 472	Remote Sensing of the Environment
NRS 552	Current Lit in Remote Sensing
NRS 578	LIDAR and Optical Remote Sensing Analysis
NRS 580	Restoration Ecology Practicum
REM 456	Integrated Rangeland Management
REM 459	Rangeland Ecology
REM 507	Landscape and Habitat Dynamics
REM 520	Advanced Vegetation Measurement and Monitoring
REM/WLF/ FISH/NRS/ FOR 504	Special Topics
SOIL 544	Water Quality in the Pacific Northwest

Total Hours **27-31**

Courses to total 30 credits for this degree

Natural Integrated Natural Resources

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of natural resource issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve natural resource issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas.
4. The student will understand diverse viewpoints and perspectives and apply these to the natural resources professions; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of natural resources as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.

Fire Ecology and Management

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of fire ecology and management issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve fire ecology and management issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas with relevance to fire ecology and management.
4. The student will understand diverse viewpoints and perspectives and apply these to the fire ecology and management; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of wildland fire and natural resources as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.

Restoration Ecology and Habitat Management

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of restoration ecology and habitat management issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve restoration ecology and habitat management issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas with relevance to restoration ecology and habitat management.
4. The student will understand diverse viewpoints and perspectives and apply these to restoration ecology and habitat management; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of natural resources and wildlife habitat as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.

Fish and Wildlife Science and Management

1. The student will master and integrate information and knowledge from ecological, social, economic and political perspectives – into a systems view of fish and wildlife science and management issues.
2. The student will be able to synthesize ideas and information to identify, analyze and problem-solve fish and wildlife science and management issues; demonstrate an application of this synthesis.
3. The student will be able to demonstrate oral, written and visual techniques to communicate complex natural resource ideas with relevance to fish and wildlife science and management.
4. The student will understand diverse viewpoints and perspectives and apply these to fish and wildlife science and management; demonstrate reflection and expanded understanding as applied to one's professional goals.
5. The student will be able to define and apply sustainable stewardship and/or management of natural resources, fisheries, and wildlife habitat as an ethical, socially responsible practice; understand ethical dilemmas and make ethical choices.

Natural Resources (M.S.)

Work alongside internationally recognized faculty leading natural resources research in pursuit of your degree and make an impact on the problems facing our natural world. Our research encompasses a wide range of natural resource disciplines, and this degree focuses primarily on students interested in pursuing research opportunities under the guidance of a major professor and a graduate advisory committee.

The thesis-based M.S. degree in Natural Resources requires completion of a research project that is the result of original work carried out by the student under the supervision of the major professor and the graduate advisory committee. To be admitted to this program, a faculty member must agree to serve as your major advisor. It is strongly encouraged that you contact a potential faculty mentor about opportunities within their lab prior to applying for admission to this program.

Master of Science. Major in Natural Resources.

Thesis and non-thesis options are offered with a major in natural resources. See the respective departmental sections for details.

1. Demonstrate understanding of the scientific method and qualitative/quantitative analysis methods.
2. Critically synthesize existing knowledge in science and their natural resource discipline and describe how their research represents a step forward towards the generation of new knowledge.
3. Critically apply theories, methodologies, and knowledge to address important questions in natural resources.
4. Conduct research of significance in a natural resource discipline or as part of a disciplinary or an interdisciplinary or creative project.
5. Plan and conduct this research or implement this project under the guidance of an advisor and/or committee while developing intellectual independence.
6. Develop potential ability in disseminating oral communication to peers in disciplinary research areas.
7. Develop potential ability in disseminating written communication to peers in disciplinary and/or interdisciplinary research areas.
8. Develop potential ability in disseminating and presenting complex information to non-science groups.
9. Develop potential expertise in a specialized research area in natural resources.
10. Demonstrate self-defined pathway for career following defense.
11. Develop potential ability for leadership in natural resource discipline.
12. Interact productively with people from diverse backgrounds and team members with integrity and professionalism.
13. Develop potential ability, through service, for the value of their discipline to the academy and community at large.
14. Follow the principles of ethics in their field and in academia.

Natural Resources (Ph.D.)

Doctor of Philosophy. Major in Natural Resources.

General Ph.D. requirements apply. Doctoral candidates are required to have an understanding of the principles of resource management in areas other than that chosen as a specialization. There is no general college

requirement of proficiency in a foreign language for the doctorate, but one may be required by an individual student's committee where this seems desirable.

There is only one major for the Ph.D. degree in Natural Resources. However, dissertation topics are selected from disciplinary areas within each department. The single designation for the major is in keeping with the college's philosophy of integrated resource management.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the PhD in Natural Resources degree.

1. Students plan and conduct research or implement a project under the guidance of an advisor and/or committee while demonstrating intellectual independence.
2. Demonstrate original thought and insights to advance their discipline.
3. Develop skills in disseminating oral communication to peers in disciplinary research areas.
4. Demonstrate skills in disseminating written communication to peers in disciplinary and/or interdisciplinary research areas.
5. Demonstrate skills in disseminating and presenting complex information to non-science groups.
6. Demonstrate skills in synthesizing need of research focus to potential sponsors.

Natural Resources Minor

Code	Title	Hours
FOR 235	Society and Natural Resources	3
FOR 221	Principles of Ecology	3

Select at least three courses from the following subjects, including at least 3 credits at the 300-level or above:

Fishery Resources (FISH) (p. 625)
Forest Resources (FOR) (p. 635)
Forest and Sustainable Products (FSP) (p. 634)
Natural Resources (NR) (p. 710)
Natural Resources and Society (NRS) (p. 711)
Rangeland Ecology and Management (REM) (p. 740)
Wildlife Resources (WLF) (p. 764)

Total Hours 18

Note: Not open to students pursuing a major in the College of Natural Resources.

Courses to total 18 credits for this minor

Department of Natural Resources and Society

Jaap Vos, Chair (Water Center 242G; phone 208-885-4595; e-mail nrs@uidaho.edu; www.uidaho.edu/cnr/departments/nrs (<http://www.uidaho.edu/cnr/departments/nrs/>).

Undergraduate programs in the Department of Natural Resources and Society involve the study of how individuals, private, non-profit, and governmental institutions determine how land and natural resources

are allocated and managed. The Department prepares professionals and helps build the capacity of organizations that protect and conserve the environment. The undergraduate program prepares conservation professionals who:

1. Possess core skills relating to organizational management and leadership;
2. Are aware of social science theories, approaches, and technological applications;
3. Can apply both social theory and practice to current conservation issues;
4. Can work across disciplinary and sector boundaries with diverse stakeholders;
5. Understand and apply key concepts related to the planning and management of protected areas and working landscapes; and
6. Develop and incorporate a personal land ethic into their daily actions and relationships.

Students receive a solid educational foundation by studying natural resources and their management. These experiences are coupled with courses in the human dimensions of resource use, including a strong emphasis in sociology, psychology, geospatial sciences, political science, economics, and communication.

The Natural Resource Conservation B.S. undergraduate degree has two tracks: Conservation Science and Conservation Planning and Management. These prepare students for employment or graduate education in the social dimensions of natural resource and environmental management. Graduates are prepared for a wide spectrum of career opportunities related to the human dimensions of conservation. Careers, however, usually begin in one of three general areas: environmental communication/education; parks, protected areas, and wilderness conservation; or land management policy and planning. Graduates find employment in private businesses; county, state, and national parks and protected areas; educational institutions; environmental non-profit organizations; and a variety of resource-management agencies such as the U.S. Forest Service, Bureau of Land Management, National Park Service, and others. Some students also pursue a second degree in ecology, environmental science, forestry, wildlife and fisheries, or range management to broaden their employability. Others select foreign language coursework to prepare for careers in international conservation.

The department also offers thesis and non-thesis graduate programs (M.S. with a major in Natural Resources) as well as a Ph.D. These are multidisciplinary and provide students with the opportunity to combine interests in natural resource management and the social and/or biophysical sciences. In cooperation with an advisory committee, each student develops a program of studies that supports their educational and professional interests. Graduate courses are available in this department and in supporting areas such as forest resources, landscape ecology, anthropology, geography, education, statistics, political science, sociology, and psychology. In addition, the department is the home of the award-winning McCall Outdoor Science School (MOSS) graduate program (<http://www.uidaho.edu/cnr/moss>) (<http://www.uidaho.edu/cnr/moss/>). This innovative program is housed at the UI McCall Field Campus and prepares students to become leaders in teaching and science communication to a broad array of audiences.

Admission to graduate study normally requires completion of undergraduate coursework in the natural and social sciences. Applicants who have completed their undergraduate degrees in fields not closely related may be required to make up deficiencies as determined by

their advisory committees. Admission is based on undergraduate grades, evidence of ability to complete graduate-level work, letters of recommendation, examination scores, the compatibility of the student's educational and career objectives with areas of concentration in the department, and the availability of departmental graduate faculty.

For additional information, please consult the department head (208-885-7911) or visit the department website: www.uidaho.edu/cnr/departments/nrs/ (<http://www.uidaho.edu/cnr/departments/nrs/>).

Minors

- Environmental Communication Minor (p. 436)
- Natural Resource Conservation Minor (p. 437)

Certificates

- Remote Sensing of the Environment Undergraduate Academic Certificate (p. 441)

Natural Resources and Society Graduate Program Majors

Candidates must fulfill the requirements of the College of Graduate Studies and of the College of Natural Resources. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Natural Resources and Society (M.S.) (p. 438)
- Natural Resources and Society (Ph.D.) (p. 438)

Certificates

- Environmental Education and Science Communication Academic Graduate Certificate (p. 437)
- Remote Sensing of the Environment Graduate Academic Certificate (p. 440)

Environmental Communication Minor

Code	Title	Hours
JAMM 121	Media Writing	3
JAMM 252	Introduction to Strategic Communications	3
NRS 387	Environmental Communication Skills	3
NRS 311	Public Involvement in Natural Resource Management	3
Select three courses from the following:		9
NRS 487	Environmental Education	
ART 280	Understanding Photography	
COMM 347	Persuasion	
COMM 410	Conflict Management	
COMM 431	Applied Business and Professional Communication	
JAMM 275	Introduction to Film and TV Production	
JAMM 361	Advertising Creativity	
JAMM 425	Magazine Writing	

Total Hours

21

Courses to total 21 credits for this minor

Environmental Education and Science Communication Academic Graduate Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
Content I Block		
Optional:		
NRS 504	Special Topics (Intro to Ecol Data Analysis)	1
Select two of the following courses:		5-8
NRS 560	Place-based Ecology I	
NRS 563	Place Based Env. Education	
NRS 556	Team Leadership for Environmental Educators	
Content II Block		
Select two of the following courses:		5-8
NRS 565	Science Communication and the Environment	
NRS 557	Community Leadership for Environmental Educators	
NRS 566	Place-based Ecology II	
Teaching Practicum Block		
Select at least two of the following:		4
NRS 562	Field Science Teaching	
NRS 564	Teaching Environmental Education in a Winter Environment	
NRS 567	Environmental Education Teaching Practicum I	
NRS 568	Environmental Education Teaching Practicum II	
Research Block		
Select at least two credits of any of the following:		2
NRS 500	Master's Research and Thesis ¹	
NRS 502	Directed Study	
NRS 599	Non-thesis Master's Research	
Total Hours		17-23

1

NRS 500 Master's Research and Thesis or NRS 599 Non-thesis Masters Research for students seeking this certificate to complement their current M.S. thesis program or non-thesis MNR program.

Courses to total 20 credits for this certificate

- Students will explore one's life purpose and meaning through transformational experiences that foster an understanding of self, relationships, and diverse global perspectives; students will critically analyze their own perspective and performance, and demonstrate empathy for diverse perspectives.
- Students will apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities; Students will demonstrate leadership in a variety of situations and exhibit tolerance for adversity and uncertainty.

- Students will critically analyze information and demonstrate the ability to effectively communicate science through a variety of media and with a diversity of audiences, understand its ethics, and identify its roles in the formulation of individual and public decisions.
- Students will develop knowledge in ecology, science communication, leadership, and place-based education. Students will apply this knowledge in disciplinary specialization and will create a final portfolio that demonstrates how they integrate knowledge across disciplines.
- Students will demonstrate a basic understanding of local ecology and socio-ecological issues.
- Students will acquire, articulate, create, and convey intended meaning using verbal and non-verbal methods of communication that demonstrate respect and understanding in a complex society, with particular emphasis on the role that communication plays in science, leadership, and education to address and communicate socio-ecological issues, environmental issues, and issues of social justice.
- Students will demonstrate an ability to plan and deliver inclusive, student-centered, inquiry-based, place-based instruction.
- Students will apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities.
- Students will create and evaluate a project that addresses a "real world" challenge.

Natural Resource Conservation Minor

Note: This minor may not be earned by students in an existing degree program in the Department of Natural Resources and Society.

Code	Title	Hours
NRS 235	Society and Natural Resources	3
NRS 310	Social Science Methods	4
NRS 364	Politics of the Environment	3
or NRS 462	Natural Resource Policy	
Select 9 credits of electives from the following:		9
NRS 383	Natural Resource and Ecosystem Service Economics	
NRS 386	Managing Complex Environmental Systems	
NRS 387	Environmental Communication Skills	
NRS 475	Local and Regional Environmental Planning	
NRS 311	Public Involvement in Natural Resource Management	
Total Hours		19

Courses to total 19 credits for this minor

Natural Resources and Society (M.S.) Master of Science. Major in Natural Resources.

Thesis, non-thesis, and course-based options are offered.

1. Thesis programs are research oriented, and the student is required to conduct independent research and present the results as a thesis, which must be approved by the candidate's supervisory committee.
2. Non-thesis programs are concentrated more heavily on coursework. Though research may be conducted, the candidate is not required to present the results in a formal thesis. A final report, professional paper(s), or other terminal project agreed upon in advance by the advisory committee is a normal requirement under this plan. This program lends itself to projects such as recreation master plans, regional plans, area management plans, historical reviews, and the development of professional interpretive media.
3. The course-based program is designed for practitioners with a focus on coursework that will prepare professionals for leadership careers in conservation.

For both the thesis and non-thesis options, after a research or other scholarly project is selected, the student must prepare a formal work plan for their committee and make an oral public presentation of the proposed project. The purpose of this requirement is to:

1. help structure and sharpen the student's thinking and approach to the project,
2. obtain the views of various knowledgeable persons that may lead to constructive modifications in the work plan,
3. gain experience in making professional presentations, and
4. increase communication within the academic community.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the Master of Science in Natural Resources and Society degree.

1. Demonstrate understanding of the scientific method and qualitative/quantitative analysis methods.
2. Critically synthesize existing knowledge in science and their natural resource discipline and describe how their research represents a step forward towards the generation of new knowledge.
3. Critically apply theories, methodologies, and knowledge to address important questions in natural resources.
4. Conduct research of significance in a natural resource discipline or as part of a disciplinary or an interdisciplinary or creative project.
5. Plan and conduct this research or implement this project under the guidance of an advisor and/or committee while developing intellectual independence.
6. Develop potential ability in disseminating oral communication to peers in disciplinary research areas.
7. Develop potential ability in disseminating written communication to peers in disciplinary and/or interdisciplinary research areas.
8. Develop potential ability in disseminating and presenting complex information to non-science groups.

9. Develop potential expertise in a specialized research area in natural resources.
10. Demonstrate self-defined pathway for career following defense.
11. Develop potential ability for leadership in natural resource discipline.
12. Interact productively with people from diverse backgrounds and team members with integrity and professionalism.
13. Develop potential ability, through service, for the value of their discipline to the academy and community at large.
14. Follow the principles of ethics in their field and in academia.

Natural Resources and Society (Ph.D.)

Doctor of Philosophy. Major in Natural Resources.

The Ph.D. degree is available with a major in natural resources. General Ph.D. requirements apply; see the Natural Resources and Society (p. 435) section for details.

Please see the College of Natural Resources graduate handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/cnr/grad-programs/cnr-grad-student-and-faculty-advisor-handbook.pdf?la=en&hash=0278D84660B4A60E266E591BB5F18A7DBA2A9E1F>) for details and program requirements on earning the PhD in Natural Resources and Society degree.

1. Students plan and conduct research or implement a project under the guidance of an advisor and/or committee while demonstrating intellectual independence.
2. Demonstrate original thought and insights to advance their discipline.
3. Develop skills in disseminating oral communication to peers in disciplinary research areas.
4. Demonstrate skills in disseminating written communication to peers in disciplinary and/or interdisciplinary research areas.
5. Demonstrate skills in disseminating and presenting complex information to non-science groups.
6. Demonstrate skills in synthesizing need of research focus to potential sponsors.

Natural Resources Enterprise Management (B.S.)

Required course work includes the university requirements (see regulation J-3 (<https://catalog.uidaho.edu/general-requirements-academic-procedures/j-general-requirements-baccalaureate-degrees/>)), and:

Code	Title	Hours
FOR 221/ WLF 220	Principles of Ecology	3
FOR 375	Fundamentals of Geomatics	3
NR 101	Exploring Natural Resources	2
NRS 125	Introduction to Conservation and Natural Resources	3
NRS 201	Introduction to Natural Resource Enterprise Management	2
NRS 235	Society and Natural Resources	3

NRS 311	Public Involvement in Natural Resource Management	3
NRS 383	Natural Resource and Ecosystem Service Economics	3
NRS 462	Natural Resource Policy	3
NRS 497	Senior Thesis	3
Select 9 credits from the following list:		9
ENTR 314	Startup Innovation and Ideation	
ENTR 315	Feasibility Analysis	
ENTR 316	Business Model Design	
ENTR 317	Intellectual Property and Legal Issues for New Ventures	
ENTR 318	Prototype Development	
ENTR 319	New Venture Marketing	
ENTR 320	New Venture Funding	
ENTR 321	Accounting for Entrepreneurs	
ENTR 322	Social Ventures	
ENTR 323	Launching Tech Ventures	
Select one of the following emphasis areas:		21-28
Natural Resources Stewardship (p. 439)		
Natural Resources Development (p.)		
Total Hours		58-65

A. Natural Resources Stewardship

Code	Title	Hours
ENGL 313	Business Writing	3
or ENGL 316	Environmental Writing	
or ENGL 317	Technical Writing II	
NRS 364	Politics of the Environment	3
NRS 387	Environmental Communication Skills	3
NRS 475	Local and Regional Environmental Planning	3
Choose five courses from the following:		9-16
AGEC 477	Law, Ethics, and the Environment	
COMM 456	Nonprofit Fundraising	
ENVS 479	Introduction to Environmental Regulations	
FIRE 326	Fire Ecology	
FOR 493	Business of Forestry	
HIST 424	American Environmental History	
MHR 311	Introduction to Management	
MHR 418	Managing Organization Design and Leading Changes	
NRS/FOR 472	Remote Sensing of the Environment	
ORGS 305	Nonprofit Organizations	
ORGS 320	Budgeting for Small Organizations	
ORGS 407	Advanced Nonprofit Organizations	
REM 280	Introduction to Wildland Restoration	
WLF/FISH 314	Ecology of Terrestrial Vertebrates	
WLF 440	Conservation Biology	
Total Hours		21-28

Courses to total 120 credits for this degree

B. Natural Resources Development

Code	Title	Hours
FIRE 326	Fire Ecology	3
REM 280	Introduction to Wildland Restoration	2
WLF/FISH 314	Ecology of Terrestrial Vertebrates	3
WLF 440	Conservation Biology	3
Choose five courses from the following:		11-17
FISH 430	Riparian and River Ecology	
FOR 430	Forest Operations	
FIRE 451	Fuels Inventory and Monitoring	
FOR 462	Watershed Science and Management	
FOR 484	Forest Policy and Administration	
FOR 493	Business of Forestry	
NRS/FOR 472	Remote Sensing of the Environment	
ORGS 305	Nonprofit Organizations	
REM 429	Landscape Ecology	
REM 456	Integrated Rangeland Management	
REM 459	Rangeland Ecology	
WLF 492	Wildlife Management	
Total Hours		22-28

Courses to total 120 credits for this degree

Natural Resources Stewardship Emphasis

Fall Term 1		Hours
BIOL 102	Biology and Society	3
BIOL 102L	Biology and Society Lab	1
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
NR 101	Exploring Natural Resources	2
Oral Communications Course		3
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
FOR 221	Principles of Ecology	3
NRS 125	Introduction to Conservation and Natural Resources	3
Humanistic and Artistic Ways of Knowing Course		3
American Diversity Course		3
Hours		15
Fall Term 2		Hours
NRS 201	Introduction to Natural Resource Enterprise Management	2
Social and Behavioral Ways of Knowing Course		3
Scientific Ways of Knowing Course		4
Elective Course		3
Elective Course		3
Hours		15
Spring Term 2		Hours
NRS 235	Society and Natural Resources	3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Elective Course		3
Elective Course		3
Hours		15
Fall Term 3		Hours
FOR 375	Fundamentals of Geomatics	3
NRS 364	Politics of the Environment	3
ENGL 313 OR ENGL 316 OR ENGL 317		3

Major Elective Course	3
ENTR 317 OR ENTR 318 OR ENTR 319 OR ENTR 320 OR ENTR 321 OR ENTR 322	3
Hours	15
Spring Term 3	
NRS 311 Public Involvement in Natural Resource Management	3
NRS 383 Natural Resource and Ecosystem Service Economics	3
NRS 387 Environmental Communication Skills	3
ENTR 317 OR ENTR 318 OR ENTR 319 OR ENTR 320 OR ENTR 321 OR ENTR 322	3
Major Elective Course	3
Hours	15
Fall Term 4	
NRS 462 Natural Resource Policy	3
NRS 475 Local and Regional Environmental Planning	3
ENTR 317 OR ENTR 318 OR ENTR 319 OR ENTR 320 OR ENTR 321 OR ENTR 322	3
Major Elective Course	3
Elective Course	3
Hours	15
Spring Term 4	
NRS 497 Senior Thesis	3
Capstone Experience Course	3
Major Elective Course	3
Major Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

Natural Resources Development Emphasis

Fall Term 1		Hours
BIOL 102 Biology and Society	3	
BIOL 102L Biology and Society Lab	1	
ENGL 101 Writing and Rhetoric I	3	
MATH 143 College Algebra	3	
NR 101 Exploring Natural Resources	2	
Oral Communications Course	3	
Hours	15	
Spring Term 1		
ENGL 102 Writing and Rhetoric II	3	
FOR 221 Principles of Ecology	3	
NRS 125 Introduction to Conservation and Natural Resources	3	
Humanistic and Artistic Ways of Knowing Course	3	
American Diversity Course	3	
Hours	15	
Fall Term 2		
NRS 201 Introduction to Natural Resource Enterprise Management	2	
Social and Behavioral Ways of Knowing Course	3	
Scientific Ways of Knowing Course	4	
Elective Course	3	
Elective Course	3	
Hours	15	
Spring Term 2		
NRS 235 Society and Natural Resources	3	
REM 280 Introduction to Wildland Restoration	2	
Humanistic and Artistic Ways of Knowing Course	3	
International Course	3	
Elective Course	3	
Elective Course	1	
Hours	15	
Fall Term 3		
FIRE 326 Fire Ecology	3	
FOR 375 Fundamentals of Geomatics	3	

FISH/WLF 314 Fish Ecology	3
ENTR 317 OR ENTR 318 OR ENTR 319 OR ENTR 320 OR ENTR 321 OR ENTR 322 OR ENTR 323	3
Major Elective Course	3
Hours	15
Spring Term 3	
NRS 311 Public Involvement in Natural Resource Management	3
NRS 383 Natural Resource and Ecosystem Service Economics	3
ENTR 317 OR ENTR 318 OR ENTR 319 OR ENTR 320 OR ENTR 321 OR ENTR 322 OR ENTR 323	3
Major Elective Course	3
Elective Course	3
Hours	15
Fall Term 4	
NRS 462 Natural Resource Policy	3
WLF 440 Conservation Biology	3
ENTR 317 OR ENTR 318 OR ENTR 319 OR ENTR 320 OR ENTR 321 OR ENTR 322 OR ENTR 323	3
Major Elective Course	3
Elective Course	3
Hours	15
Spring Term 4	
NRS 497 Senior Thesis	3
Capstone Experience Course	3
Major Elective Course	3
Major Elective Course	3
Elective Course	3
Hours	15
Total Hours	120

After completing the Natural Resources Enterprise Management degree:

Graduates will be able to communicate effectively and will be able to create and practice effective oral, written, and graphic communication with diverse audiences.

Graduates will be able to critically evaluate and integrate concepts and knowledge from ecological, social, economic, political and business perspectives.

Graduates will be able to integrate and critically assess diverse viewpoints and perspectives that increase their ability to effectively manage natural resources and the environment as well as operate natural resource-based businesses/organizations.

Graduates will be able to synthesize ideas and information, to identify, analyze and address natural resource management issues, and develop planning and management skills to productively address conservation and environmental issues.

Graduates will demonstrate an integrated understanding of business and entrepreneurial principles and apply their knowledge to entrepreneurial opportunities in natural resource management and nature-based businesses/organizations

Remote Sensing of the Environment Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
GEOG 583	Remote Sensing IMAGE ANALYSIS/GIS Integration	3
NRS/FOR 472	Remote Sensing of the Environment	4
NRS 552	Current Lit in Remote Sensing	1
Select two of the following courses:		6
FOR 535	Remote Sensing of Fire	
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	
NRS 578	LIDAR and Optical Remote Sensing Analysis	
REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)	
Total Hours		14

Courses to total 14 credits for this certificate

Remote Sensing of the Environment Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
Requirement A		
Take all of the following courses:		
FOR/NRS 472	Remote Sensing of the Environment	4
GEOG 385	Foundations of GIS	3
or FOR 375	Fundamentals of Geomatics	
GEOG 483	Remote Sensing IMAGE ANALYSIS/GIS Integration	3
Requirement B		
Select two of the following:		6
FOR 375	Fundamentals of Geomatics	
FIRE 435	Remote Sensing of Fire	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
NRS 478	LIDAR and Optical Remote Sensing Analysis	
REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)	
Total Hours		16

Courses to total 16 credits for this certificate

College of Science

Ginger E. Carney, Dean; Mark J. Nielsen, Associate Dean (321 Mines Bldg; 208-885-6195, www.uidaho.edu/sci (<http://www.uidaho.edu/sci/>); science@uidaho.edu)

The College of Science was established in 2002. The mission of the college is to provide a superior education in the sciences, to advance knowledge through research and scholarship, and to serve the university, state and nation.

Faculty and Staff

The college has approximately 140 faculty and staff members supporting its academic and research programs. Approximately 700 undergraduate students and 215 graduate students are enrolled in programs offered by the College of Science.

Admission to the College

Students who would like to attend the College of Science should plan their high school electives carefully to ensure that they are adequately prepared to begin their study at the college level. Students should select subjects in science and mathematics that will provide a well-rounded preparation for further study. For a statement of general undergraduate and graduate admission requirements, see the admissions (p. 41) portion of the catalog.

Facilities and Equipment

The college is housed in several buildings across campus with most of the disciplines housed in their own facility. These facilities contain teaching and research laboratories, classrooms, and faculty and administrative offices. An extensive array of analytical and other scientific equipment ensures state-of-the-art, hands-on training in all aspects of the sciences.

Scholarship and Loan Funds

Students interested in scholarships should refer to Student Financial Aid Services (<https://www.uidaho.edu/financial-aid/>). Individual scholarships (totaling approximately half a million dollars) are awarded each year by the College of Science. In general, there is no application process for these awards: all students majoring in the college will be considered for merit-based scholarships for which they are eligible. To be considered for need-based scholarships, students must have completed the Free Application for Federal Student Aid (FAFSA (<https://fafsa.ed.gov/>)). Details on specific awards can be obtained by writing to the Associate Dean of the College of Science (PO Box 443025, University of Idaho, Moscow, ID 83844-3025) or by sending e-mail to science@uidaho.edu.

Departments and Programs of Instruction

The college includes the departments of Biological Sciences, Chemistry, Geography and Geological Sciences, Mathematics and Statistical Science, and Physics. Faculty from the College of Science participate in the interdisciplinary programs of Environmental Science, Neuroscience, Bioinformatics and Computational Biology, and Bioregional Planning and Community Design. The college also has affiliation with the Idaho Geological Survey.

Undergraduate Research Opportunities

The college prides itself in providing opportunities for undergraduate students to work with our faculty on research projects. We believe that

the best way to experience the excitement of science is through hands-on research and that these opportunities characterize an education at a research-active university. Each year, the College of Science offers fellowships to support undergraduate research projects and hosts a student research exposition at which graduate and undergraduate students display their work.

See regulation J for general university requirements for degrees. Specific requirements for degrees offered within the college are included in the departmental listings.

Undergraduate Programs

The College of Science offers bachelor's degrees in biology, biochemistry, microbiology, medical science, chemistry, geography, geology, mathematics, statistics, mathematics and physics. Many of the majors within the college have more specific option selections. For example, there is a forensic science option within the chemistry major, a mathematical biology option within the mathematics major, and an actuarial science major within the statistics major. Academic minors are offered by every department within the college, including a climate change minor within the Department of Geography and Geological Sciences. See departmental sections for details.

Graduate Programs

The College of Graduate Studies offers advanced degrees in many disciplines in the College of Science. The Master degree of Science degree Doctor of Philosophy is available in bioinformatics and computational biology; biology; chemistry; geography; geology; mathematics; physics; and statistics, and the Master of Arts in Teaching degree is offered in mathematics, physics. The A master's degree of Doctor of Philosophy is available in bioinformatics and computational biology; biology; MBB (microbiology, molecular biology, chemistry; geography; geology; mathematics, physics; and biochemistry); neuroscience; chemistry; geography; geology; mathematics; and physics. statistics. See departmental sections for details.

The degree of Doctor of Philosophy is available in bioinformatics and computational biology; biology; chemistry; geography; geology; mathematics; and physics. Please see the list of programs offered for details.

Certificate Programs

An undergraduate certificate is Certificate programs are offered in geographic information systems (through the Department of Geography and Geological Sciences) Bioinformatics and graduate certificates are offered in data analytics Computational Biology; Climate Change and statistical science (through Geographic Information Systems (both through the Department of Geography and Geological Sciences); and Data Analysis and Statistics (both through the Department of Mathematics and Statistical Science).

Preparatory Programs in Medicine and Dentistry

Students interested in preparing for postgraduate education in health professions may, with proper advising and preparation, choose an undergraduate major in almost any field. Students are encouraged to select a major in an area that reflects their interests and aptitudes, and then simultaneously complete prerequisite coursework for admission to their graduate programs of choice. Comprehensive pre-health professions advising (<http://www.uidaho.edu/sci/pre-health/>) and a pre-health professions studies minor (<https://uidaho-curr.courseleaf.com/colleges->

related-units/science/pre-health-professions-studies/) are available to all interested students, regardless of their undergraduate major.

Teacher Education Program

Students preparing for secondary-school teaching in science or mathematics can do so by completing one of the degree options in the College of Education (see the College of Education (<https://uidaho-curr.courseleaf.com/colleges-related-units/education-health-human-sciences/>) section of this catalog) or or also through pursuing a major within the College of Science plus additional coursework to meet certification requirements. Students interested in this second option should consult with an advisor in their chosen discipline to plan the appropriate course selections.

Major Curricula

Major Requirements. The departmental requirements are stated under the respective curricula.

Program in Bioinformatics and Computational Biology

Paul Hohenlohe, BCB Program Director (256 Life Sciences South 83844-3051; phone 208-885-4031; bcb@uidaho.edu; www.uidaho.edu/sci/bcb (<http://www.uidaho.edu/sci/bcb/>)).

The interdisciplinary program in Bioinformatics and Computational Biology is administered by the College of Science (p. 442). (<http://www.uidaho.edu/sci/>)

Technological advances in the last two decades have created an avalanche of biological data, and this challenge will only grow in the immediate future. Modern tools and knowledge to analyze and interpret large, complex datasets are thus increasingly central to much of biology. They are required to improve human health and natural and agricultural resource management as well as simply to understand the natural world better. Moreover, industries and agencies in the areas of health, agriculture, and conservation require workers who master these new tools and knowledge. It has become increasingly clear that success in science requires an integrative approach that unites experimental design, data collection, analysis and interpretation in a common framework. To meet this need, the University of Idaho launched the interdisciplinary Bioinformatics and Computational Biology (BCB) graduate program in 2003. This program includes faculty with expertise in the Biological Sciences, Mathematics, Statistics, and Computer science.

The University of Idaho offers M.S. and Ph.D. degrees in Bioinformatics and Computational Biology (BCB) as well as a graduate certificate in BCB. The BCB program is offered on campus in Moscow at the University of Idaho and is administered by the College of Science.

A degree in BCB requires coursework and practical experience in biology, mathematics, statistics, and computer science. The focus of the degree is on learning to develop and use computational and mathematical tools to analyze biological data. BCB is a highly interdisciplinary program and requires students and faculty to bridge these disciplines. BCB faculty members are drawn from twelve departments from the Colleges of Agricultural and Life Sciences; Engineering; Letters, Arts and Social Sciences; and Natural Resources and Science. These faculty members are available to serve on BCB graduate student committees.

The M.S. and Ph.D. degrees prepare students for a lifetime of discovery. They enable the graduate to advance the state of the art, not merely to

keep up with it. The graduate program develops the student's critical thinking, investigatory, and expository skills. They will acquire the methodological skills to resolve important open problems and tackle challenging new projects. The student will learn to present problems and solutions, both orally and in writing.

Bioinformatics and Computational Biology Graduate Program

- Bioinformatics and Computational Biology Graduate Academic Certificate (p. 446)
- Bioinformatics and Computational Biology (M.S.) (p. 443)
- Bioinformatics and Computational Biology (Ph.D.) (p. 445)
- Professional Applications of Data Science Graduate Academic Certificate (p. 447)

Bioinformatics and Computational Biology (M.S.)

Master of Science. Major in Bioinformatics and Computational Biology.

Admission to this program is highly competitive; meeting admission requirements is not a guarantee of admission. Students who wish to enter the master's or doctoral degree program must demonstrate mathematical maturity, skill in the use of high-level programming language, and a basic knowledge of molecular biology. However, students lacking one of these may be admitted with the requirement that they make up the deficiency. The minimum admission requirements are at least a 3.0 undergraduate GPA if the student graduated within the last five years, although this may be waived under exceptional circumstances. Students for whom English is a second language must have a TOEFL score of 600 (250 computer-based or 100 IBT) or higher. Applicants must provide at least three letters of reference speaking to the applicant's aptitude for graduate research and a statement of research interests that clearly identifies the research the student would like to pursue and why they want to pursue it at the University of Idaho.

Both the M.S. and Ph.D. degrees require a thesis. Students will take research and thesis credits BCB 500 or research and dissertation credits BCB 600. The M.S. degree will require at least nine credits of thesis research, and the Ph.D. degree will require at least thirty credits. M.S. theses for a BCB degree will demonstrate a high level of scholarly achievement, and doctoral dissertations will represent a significant, original contribution to the field. In addition to the thesis and dissertation, students will publish their work in appropriate peer-reviewed venues. Students will present their thesis and dissertation publicly at their final defense.

Each student's graduate committee will consist of at least four faculty members. This committee will represent the three BCB disciplines (biological sciences, computer sciences, and mathematical sciences) and will include at least three participating BCB faculty members. Co-advising by major professors in different disciplines will be particularly attractive for BCB degrees, and is possible at the discretion of the student and their committee. There is no explicit requirement for an "external" committee member since each committee will already include faculty from at least three different disciplines.

There will be no qualifying examination. The Ph.D. will require a preliminary examination, which will be taken no later than the end of the fifth semester. The preliminary examination will have three components. First, it will include a written thesis proposal prepared in the format of a federal research grant and submitted to the committee at least four weeks prior to the oral examination. Second, there will be a public, oral presentation of the research proposal. Third, the committee will conduct a non-public oral examination in which committee members will ask questions about the proposed research and about background and core coursework.

Incoming students admitted with background deficiencies will take background courses. For example, biology majors with little formal introduction to computation will take background courses in computer science. The specific required background courses will be determined by the students' graduate committees with the approval of the program director. Note that credits from courses numbered 300 and below do not count toward the BCB degree requirements, though they may be required to fulfill deficiencies.

The core courses form a central, shared educational experience for all BCB students. These courses will enable them to share a common language and to discuss problems from multiple disciplinary points of view. This shared experience will also give BCB students a sense of identity and community, which will encourage them to help each other overcome cultural and terminological differences that usually make such interdisciplinary interactions challenging. When possible and appropriate, core courses will include group projects using team members with backgrounds in different disciplines.

The depth courses provide more detailed knowledge of bioinformatics and computational biology and provide the springboard for graduate research. The list of courses will evolve with the research interests of the BCB faculty participants, and more will be added as new faculty members join the program. See the program webpage at www.uidaho.edu/cogs/bcb (<http://www.uidaho.edu/cogs/bcb/>) for the latest information.

Other courses may be required as determined by the student's committee.

To explicitly make it easier to bridge the traditional gap between disciplines, the BCB program includes four bridging activities:

- **Seminars and Workshops:** Seminar series are available, and BCB students are required to participate. Seminars are an opportunity for students to interact with experts in a variety of fields. Workshops will provide practical experience with tools and techniques.
- **Lab rotations:** In order to expose doctoral students to the research perspectives of another discipline, we will require them to spend at least one semester in a lab outside the discipline of their major professor. The lab will be the research lab of one of the participating BCB faculty outside the discipline of the student's major professor. The student's committee will determine, in conjunction with participating faculty members, with whom the student will meet this requirement. There is no lab rotation requirement for M.S. students.
- **One Credit Supplements:** General courses in computer science, mathematics, and statistics sometimes lack material specific to bioinformatics and computational biology. Participating faculty will offer one-credit supplements to current courses in order to provide this connection without duplicating courses in the current catalogue. These will be required of BCB students as determined by their graduate committees.

- **Teaching experience:** Each doctoral candidate will be required to have at least one semester of teaching experience relevant to the BCB program with the details of this requirement determined by their committee. This requirement may be satisfied, for example, by teaching a course, running a workshop, offering a supplement, or working as a teaching assistant.

The M.S. requires a minimum of 30 credits, and the Ph.D. requires a minimum of 78 credits. The BCB program assumes the usual graduate full-time load of at least 9 credits per semester. Note that the Ph.D. requires at least 18 credits of "other," supplemental, or workshop courses at the 400-level or above since there are a total of 60 minimum required core, depth, thesis, seminar, and laboratory credits, and the student must have at least 78 credits to graduate.

M.S. Degree

Code	Title	Hours
Core Courses:		
CS 515	Computational Biology: Sequence Analysis	3
BIOL 552	Professional Development for Biologists	3
MATH 563	Mathematical Genetics	3
Depth Courses:		9
Students must complete at least 3 credits in Biological Sciences and 3 credits in Computer/Mathematical/Statistical Sciences		
<i>Biological Sciences</i>		
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 444	Genomics	
BIOL 526	Systems Biology	
BIOL 545	Phylogenetics	
BIOL 547	Virology	
BIOL 554	Biochemistry II	
BIOL 585	Prokaryotic Molecular Biology	
BIOL 587	Cellular and Molecular Basis of Disease	
PLSC 588	Genetic Engineering	
WLF 561	Landscape Genetics	
<i>Computer/Mathematical/Statistical Sciences</i>		
BIOL 526	Systems Biology	
CS 511	Parallel Programming	
CS 570	Artificial Intelligence	
CS 572	Evolutionary Computation	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 538	Stochastic Models	
MATH 428	Numerical Methods	
PHYS 533	Statistical Mechanics	
STAT 519	Multivariate Analysis	
STAT 565	Computer Intensive Statistics	
Graduate Seminar:		2
BCB 501	Seminar	
Thesis:		10
BCB 500	Master's Research and Thesis	
Total (min):		30

1. Obtain understanding of the disciplines of Bioinformatics and Computational Biology (BCB): the biological sciences, computational

sciences, and mathematical sciences. Master the fundamental concepts of BCB from the perspective of each of the three program disciplines with the ability to integrate the multidisciplinary principles.

2. Acquire specialized expertise and master state-of-the-art research topics in one of the three BCB areas: biological sciences, computational sciences, or mathematical sciences.
3. Be able to explain BCB concepts and research results to people with widely varying backgrounds: experts in the same and other fields as well as the general public.
4. Accomplish significant and innovative interdisciplinary research by combining concepts and theories from the three BCB areas.

Bioinformatics and Computational Biology (Ph.D.)

Doctor of Philosophy. Major in Bioinformatics and Computational Biology.

Admission to this program is highly competitive; meeting admission requirements is not a guarantee of admission. Students who wish to enter the master's or doctoral degree program must demonstrate mathematical maturity, skill in the use of high-level programming language, and a basic knowledge of molecular biology. However, students lacking one of these may be admitted with the requirement that they make up the deficiency. The minimum admission requirements are at least a 3.0 undergraduate GPA if the student graduated within the last five years, although this may be waived under exceptional circumstances. Students for whom English is a second language must have a TOEFL score of 600 (250 computer-based or 100 IBT) or higher. Applicants must provide at least three letters of reference speaking to the applicant's aptitude for graduate research and a statement of research interests that clearly identifies the research the student would like to pursue and why they want to pursue it at the University of Idaho.

Both the M.S. and Ph.D. degrees require a thesis. Students will take research and thesis credits BCB 500 or research and dissertation credits BCB 600. The M.S. degree will require at least nine credits of thesis research, and the Ph.D. degree will require at least thirty credits. M.S. theses for a BCB degree will demonstrate a high level of scholarly achievement, and doctoral dissertations will represent a significant, original contribution to the field. In addition to the thesis and dissertation, students will publish their work in appropriate peer-reviewed venues. Students will present their thesis and dissertations publicly at their final defense.

Each student's graduate committee will consist of at least four faculty members. This committee will represent the three BCB disciplines (biological sciences, computer sciences, and mathematical sciences) and will include at least three participating BCB faculty members. Co-advising by major professors in different disciplines will be particularly attractive for BCB degrees, and is possible at the discretion of the student and their committee. There is no explicit requirement for an "external" committee member since each committee will already include faculty from at least three different disciplines.

There will be no qualifying examination. The Ph.D. will require a preliminary examination, which will be taken no later than the end of the fifth semester. The preliminary examination will have three components.

First, it will include a written thesis proposal prepared in the format of a federal research grant and submitted to the committee at least four weeks prior to the oral examination. Second, there will be a public, oral presentation of the research proposal. Third, the committee will conduct a non-public oral examination in which committee members will ask questions about the proposed research and about background and core coursework.

Incoming students admitted with background deficiencies will take background courses. For example, biology majors with little formal introduction to computation will take background courses in computer science. The specific required background courses will be determined by the students' graduate committees with the approval of the program director. Note that credits from courses numbered 300 and below do not count toward the BCB degree requirements, though they may be required to fulfill deficiencies.

The core courses form a central, shared educational experience for all BCB students. These courses will enable them to share a common language and to discuss problems from multiple disciplinary points of view. This shared experience will also give BCB students a sense of identity and community, which will encourage them to help each other overcome cultural and terminological differences that usually make such interdisciplinary interactions challenging. When possible and appropriate, core courses will include group projects using team members with backgrounds in different disciplines.

The depth courses provide more detailed knowledge of bioinformatics and computational biology, and provide the springboard for graduate research. The list of courses will evolve with the research interests of the BCB faculty participants, and more will be added as new faculty members join the program. See the program webpage at www.uidaho.edu/cogs/bcb (<http://www.uidaho.edu/cogs/bcb/>) for the latest information.

Other courses may be required as determined by the student's committee.

To explicitly make it easier to bridge the traditional gap between disciplines, the BCB program includes four bridging activities:

- **Seminars and Workshops:** Seminar series are available, and BCB students are required to participate. Seminars are an opportunity for students to interact with experts in a variety of fields. Workshops will provide practical experience with tools and techniques.
- **Lab rotations:** In order to expose doctoral students to the research perspectives of another discipline, we will require them to spend at least one semester in a lab outside the discipline of their major professor. The lab will be the research lab of one of the participating BCB faculty outside the discipline of the student's major professor. The student's committee will determine, in conjunction with participating faculty members, with whom the student will meet this requirement. There is no lab rotation requirement for M.S. students.
- **One Credit Supplements:** General courses in computer science, mathematics, and statistics sometimes lack material specific to bioinformatics and computational biology. Participating faculty will offer one-credit supplements to current courses in order to provide this connection without duplicating courses in the current catalog. These will be required of BCB students as determined by their graduate committees.
- **Teaching experience:** Each doctoral candidate will be required to have at least one semester of teaching experience relevant to the BCB program with the details of this requirement determined by their committee. This requirement may be satisfied, for example, by

teaching a course, running a workshop, offering a supplement, or working as a teaching assistant.

The M.S. requires a minimum of 32 credits and the Ph.D. requires a minimum of 78 credits. The BCB program assumes the usual graduate full time load of at least 9 credits per semester. Note that the Ph.D. requires at least 18 credits of "other," supplemental, or workshop courses at the 400-level or above since there are a total of 60 minimum required core, depth, thesis, seminar, and laboratory credits, and the student must have at least 78 credits to graduate.

Ph.D. Degree

Code	Title	Hours
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Core Courses:

CS 515	Computational Biology: Sequence Analysis	3
BIOL 522	Molecular Evolution	3
MATH 563	Mathematical Genetics	3

Depth Courses: 15

Students must complete at least 6 credits in Biological Sciences and 6 credits in Computer/Mathematical/Statistical Sciences

Biological Sciences

BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 444	Genomics	
BIOL 526	Systems Biology	
BIOL 545	Phylogenetics	
BIOL 547	Virology	
BIOL 554	Biochemistry II	
BIOL 585	Prokaryotic Molecular Biology	
BIOL 587	Cellular and Molecular Basis of Disease	
PLSC 588	Genetic Engineering	
WLF 561	Landscape Genetics	

Computer/Mathematical/Statistical Sciences

BIOL 526	Systems Biology	
CS 511	Parallel Programming	
CS 570	Artificial Intelligence	
CS 572	Evolutionary Computation	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 538	Stochastic Models	
PHYS 533	Statistical Mechanics	
STAT 519	Multivariate Analysis	
STAT 565	Computer Intensive Statistics	

Seminar: 3

BCB 501	Seminar	
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Lab Rotation 3

Students with a math or computer science emphasis take BCB 506 (biological science) and students with a biology emphasis take BCB 507 (computer science) or 508 (mathematical science)

BCB 506	Laboratory Experience in the Biological Sciences	
BCB 507	Laboratory Experience in the Computational Sciences	
BCB 508	Laboratory Experience in Mathematics or Statistics	
BCB 598	Internship	

Dissertation: 30

BCB 600	Doctoral Research and Dissertation	
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Teaching Requirement:

BCB 597	Practicum	3
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Other: 15

Total (min): 78

1. Obtain understanding of the disciplines of Bioinformatics and Computational Biology (BCB): the biological sciences, computational sciences, and mathematical sciences. Master the fundamental concepts of BCB from the perspective of each of the three program disciplines with the ability to integrate the multidisciplinary principles.
2. Acquire specialized expertise and master state-of-the-art research topics in one of the three BCB areas: biological sciences, computational sciences, or mathematical sciences.
3. Successfully propose significant and innovative interdisciplinary research by combining concepts and theories from the three BCB areas.

Bioinformatics and Computational Biology Graduate Academic Certificate

There is a large and growing demand for graduates with training in bioinformatics and computational biology. These areas are vital to the biotechnology industry, the medical sciences, and conservation biology. This certificate will provide graduate students who are pursuing graduate degrees in other areas with recognition for taking multiple courses of the BCB curriculum, and thus building a strong foundation in bioinformatics and computational biology. For more information please email bcb@uidaho.edu or visit the BCB Program office in Life Sciences South room 441D.

All required coursework must be completed with a grade of 'B' or better (0-10-b (p. 94)).

Code	Title	Hours
BIOL 522	Molecular Evolution	3
CS 515	Computational Biology: Sequence Analysis	3
MATH 563	Mathematical Genetics	3
Select 3 credits from the following: ¹		
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 444	Genomics	
BIOL 456	Computer Skills for Biologists	
BIOL 545	Phylogenetics	
BIOL 547	Virology	
BIOL 585	Prokaryotic Molecular Biology	
BIOL 587	Cellular and Molecular Basis of Disease	
CS 511	Parallel Programming	
CS 570	Artificial Intelligence	
CS 572	Evolutionary Computation	
CS 575	Machine Learning	
MATH 428	Numerical Methods	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 538	Stochastic Models	

PLSC 542	Biochemistry
PLSC 588	Genetic Engineering
PHYS 533	Statistical Mechanics
STAT 519	Multivariate Analysis
STAT 565	Computer Intensive Statistics
Total Hours	12

Courses to total 12 credits for this certificate

1

Three credits in a different area than the student's disciplinary focus. This course must be approved by the BCB director or another member of the BCB governing board.

1. The student will demonstrate an augmented understanding in bioinformatics, mathematics, and computational sciences.
2. The student will have the capability to participate in interdisciplinary research and industry projects and be able to explain Bioinformatics and Computational Biology (BCB) concepts (from the biological, mathematical, and computational sciences) to people with widely varying backgrounds, from professionals in other fields to lay people.
3. The student will use and understand a common 'language' that allows those with a background in one of the BCB disciplines to communicate and collaborate in interdisciplinary projects with colleagues from other disciplines.

Professional Applications of Data Science Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (<https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/>)).

Code	Title	Hours
INTR 509	Introduction to Applied Data Science	3
BCB 521	Communicating with Data	2
BCB 520	Foundations of Data Visualization	3
BCB 522	Data Science Portfolio	1
Electives (Choose 1 of the following)*		3
AVS 531	Practical Methods in Analyzing Animal Science Experiments	
BE 521	Image Processing and Computer Vision	
BIOL 526	Systems Biology	
BIOL 545	Phylogenetics	
BE 541	Instrumentation and Measurements	
BIOL 549	Computer Skills for Biologists	
BIOL 563	Mathematical Genetics	
CE 526	Aquatic Habitat Modeling	
CS 511	Parallel Programming	
CS 515	Computational Biology: Sequence Analysis	
CS 547	Digital Forensics	
CS 570	Artificial Intelligence	
CS 574	Deep Learning	
CS 575	Machine Learning	
CS 577	Python for Machine Learning	

ED 571	Introduction to Quantitative Research
CS 572	Evolutionary Computation
CS 578	Neural Network Design
CS 579	Data Science
CS 589	Semantic Web and Open Data
GEOG 507	Spatial Analysis and Modeling
GEOG 583	Remote Sensing IMAGE ANALYSIS/GIS Integration
MATH 538	Stochastic Models
MIS 555	Data Management for Big Data
STAT 431	Statistical Analysis
STAT 514	Nonparametric Statistics
STAT 516	Applied Regression Modeling
STAT 517	Statistical Learning and Predictive Modeling
STAT 519	Multivariate Analysis
STAT 535	Introduction to Bayesian Statistics
STAT 555	Statistical Ecology
STAT 565	Computer Intensive Statistics
ED 584	Univariate Quantitative Research in Education
ED 587	Multivariate Quantitative Analysis in Education
ED 589	Theoretical Applications and Designs of Qualitative Research
ED 590	Data Analysis and Interpretation of Qualitative Research
ED 591	Indigenous and Decolonizing Research Methods
ED 592	Decolonizing, Indigenous, and Action-Based Research Methods
ED 595	Survey Design for Social Science Research
EDAD 570	Methods of Educational Research
POLS 558	Research Methods for Local Government and Community Administration
ENVS 511	Data Wizardry in Environmental Sciences
ENVS 551	Research Methods in the Environmental Social Sciences
FOR 514	Forest Biometrics
FOR 535	Remote Sensing of Fire
NRS 578	LIDAR and Optical Remote Sensing Analysis
REM 507	Landscape and Habitat Dynamics
WLF 552	Ecological Modeling
WLF 555	Statistical Ecology
WR 552	Water Economics and Policy Analysis
Total Hours	12

* Students should work with advisors for potential substitution waivers.

Courses to total 12 credits for this certificate

Student Learning Outcomes:

Upon completion of the certificate, students will be able to:

- Use open-source software to reproducibly manage, analyze, and visualize large, complex, and noisy data sets.
- Practice high quality and ethical data stewardship.
- Understand and execute data exploration.

- Effectively communicate data driven insights to experts and non-experts.
- Demonstrate their skills with an online portfolio of analyses and visualizations relevant to their field of specialization.

Department of Biological Sciences

James J. Nagler, Dept. Chair (252 Life Sc. Bldg. 83844-3051; phone 208-885-6280; www.uidaho.edu/sci/biology (http://www.uidaho.edu/sci/biology/)).

The Department of Biological Sciences offers B.S. degrees in Biochemistry, Biology (B.A. & B.S.), Medical Sciences, and Microbiology. The core curriculum used for every major involves exposure to concepts fundamental to all living things at several levels of organization and emphasizes a broad cultural base and specific training in biology, chemistry, mathematics, and physics. A diverse range of upper division electives are available to support each of the majors. Courses offered by the Department of Biological Sciences are available to students majoring in other disciplines who wish to increase their knowledge of science or who wish to obtain an academic minor.

Well-equipped laboratories are available, and students are encouraged to undertake research projects with the faculty. A wide variety of ongoing projects have produced a stimulating environment for graduate and undergraduate research. These projects include areas such as the pathophysiology of diseases that affect gastrointestinal functions; gene regulation changes in response to selection and the evolution of disordered proteins; behavioral development, play, sexual selection and female mate choice; intraflagellar transport; the diversity and distribution of prokaryotes; mechanisms behind morbidity and mortality in infants congenitally infected with human cytomegalovirus; characterizing evolutionarily permissible ecological structures in microbial ecosystems and on developing bioinformatics for very large sequence datasets; molecular cues that promote development of the nervous system; patterns of species diversification across the tree of life; prokaryote motility system; the genomic architecture of evolving populations; protein structure and function; neuromuscular biomechanics of vertebrate organisms; models of adaptive evolution and experimental evolution in viruses; regulation of the immune response to coronavirus infection in the lung; effect of environmental factors on fish reproductive biology; cellular and molecular mechanisms of vertebrate retinal development and regeneration; phylogenetic methodology and comparative phylogeography; the ecology and evolution of prokaryotic organisms; adaptive evolution; and mammalian genome evolution.

For more complete information on research concentrations, please see faculty profiles on the departmental web site at www.uidaho.edu/sci/biology/ (<http://www.uidaho.edu/sci/biology/>).

Graduates from the department enter a variety of fields and many continue their education toward an advanced degree. Recent graduates have entered health-related professions, primary and secondary teaching, agribusiness, veterinary school, graduate school, law school, state and national agencies that deal with biology (e.g., Idaho Department of Fish and Game, Environmental Protection Agency, United States Forest Service) as well as a variety of environmental consulting agencies and biotechnology companies.

Prospective students or students desiring more information may call (208-885-6280) or email the department (biosci@uidaho.edu).

Majors

- Biochemistry (B.S.Biochem) (p. 448)
- Biology (B.A. or B.S.) (p. 450)
- Medical Sciences (B.S.) (p. 455)
- Microbiology (B.S.Microbiol.) (p. 458)

Minors

- Bioethics Minor (See Department of Politics and Philosophy (p. 330))
- Biology Minor (p. 455)
- Biochemistry Minor (p. 450)
- Microbiology Minor (p. 459)
- Molecular Biology and Biochemistry Minor (p. 460)

Biological Sciences Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Biological Sciences. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree and the Department of Biological Sciences Graduate Student Handbook for required courses and procedures.

- Biology (M.S.) (p. 454)
- Neuroscience (M.S.) (p. 460)
- Biology (Ph.D.) (p. 454)
- Microbiology, Molecular Biology, and Biochemistry (Ph.D.) (p. 454)
- Neuroscience (Ph.D.) (p. 454)

Biochemistry (B.S.Biochem.)

To graduate in this program, students must earn a minimum grade of 'C' in BIOL 114, BIOL 115, and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
BIOL 101	Opportunities in Biological Sciences	1
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312 & BIOL 313	Molecular and Cellular Biology and Molecular and Cellular Laboratory	4
BIOL 380 & BIOL 382	Biochemistry I and Biochemistry I Laboratory	6
BIOL 400	Seminar	1-16
BIOL 454	Biochemistry II	3
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 253 & CHEM 254	Quantitative Analysis and Quantitative Analysis: Lab	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4
CHEM 372	Organic Chemistry II	3
MATH 170	Calculus I	4

MATH 175	Calculus II	4
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	4
STAT 251 or STAT 301	Statistical Methods Probability and Statistics	3
Select one of the following Senior Experience courses		2-3
BIOL 401	Undergraduate Research	
BIOL 407	Practicum in Biology Laboratory Teaching	
BIOL 408	Human Anatomy and Physiology Laboratory Pedagogy	
BIOL 411	Senior Capstone	
BIOL 425	Experimental Field Ecology	
Select 6 credits of electives from the following: ¹		6
BE 433	Bioremediation	
BIOL 426	Systems Biology	
BIOL 432	Immunology	
BIOL 444	Genomics	
BIOL 461	Neurobiology	
BIOL 482	Protein Structure and Function	
BIOL 485	Prokaryotic Molecular Biology	
BIOL 487	Cellular and Molecular Basis of Disease	
CHEM 374	Organic Chemistry II: Lab	
CHEM 472	Medicinal Chemistry	
CHEM 473	Intermediate Organic Chemistry	
PLSC 486	Plant Biochemistry	
PLSC 488	Genetic Engineering	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
Select one of the following:		3
CHEM 302	Principles of Physical Chemistry	
CHEM 305	Physical Chemistry	
CHEM 306	Physical Chemistry II	

Total Hours 81-97

Courses to total 120 credits for this degree

¹

Additional classes can be substituted with prior approval from advisor and chairperson

Fall Term 1	Hours
BIOL 101 Opportunities in Biological Sciences	1
BIOL 114 Organisms and Environments	4
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
MATH 170 Calculus I	4
ENGL 101 Writing and Rhetoric I	3
Hours	16
Spring Term 1	
BIOL 115 Cells and the Evolution of Life	3
BIOL 115L Cells and the Evolution of Life Laboratory	1

CHEM 112 General Chemistry II	4
CHEM 112L General Chemistry II Laboratory	1
MATH 175 Calculus II	4
ENGL 102 Writing and Rhetoric II	3
Hours	16

Fall Term 2

CHEM 253 Quantitative Analysis	3
CHEM 254 Quantitative Analysis: Lab	2
CHEM 277 Organic Chemistry I	3
CHEM 278 Organic Chemistry I: Lab	1
PHYS 211 Engineering Physics I	3
PHYS 211L Laboratory Physics I	1
Oral Communication Course	3
Hours	16

Spring Term 2

CHEM 372 Organic Chemistry II	3
PHYS 212 Engineering Physics II	3
PHYS 212L Laboratory Physics II	1
Humanistic and Artistic Ways of Knowing Course	3
Major Elective Course	3
STAT 251 OR STAT 301	3
Hours	16

Fall Term 3

BIOL 310 Genetics	3
BIOL 315 Genetics Lab	1
BIOL 380 Biochemistry I	4
BIOL 382 Biochemistry I Laboratory	2
Elective Course	1
ENGL 207 OR ENGL 208 OR ENGL 317 OR ENGL 318	3
Hours	14

Spring Term 3

BIOL 312 Molecular and Cellular Biology	3
BIOL 313 Molecular and Cellular Laboratory	1
BIOL 454 Biochemistry II	3
Humanistic and Artistic Ways of Knowing Course	3
Social and Behavioral Ways of Knowing Course	3
Elective Course	2
Hours	15

Fall Term 4

Biochemistry, Major Elective Course	3
Social and Behavioral Ways of Knowing Course	3
International Course	3
Elective Course	3
CHEM 302 OR CHEM 305 OR CHEM 306	3
Hours	15

Spring Term 4

BIOL 400 Seminar	1
Biochemistry, Major Elective Course	3
American Diversity Course	3
Elective Course	3
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411	2
Hours	12

Total Hours 120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

MATH 143 Starting Mathematics Course

Fall Term 1	Hours
BIOL 101 Opportunities in Biological Sciences	1
BIOL 114 Organisms and Environments	4
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
MATH 144 Analytic Trigonometry	1
Oral Communication Course	3
Hours	15
Spring Term 1	
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
ENGL 102 Writing and Rhetoric II	3
MATH 170 Calculus I	4
Humanistic and Artistic Ways of Knowing Course	3
Hours	14
Fall Term 2	
BIOL 115 Cells and the Evolution of Life	3
BIOL 115L Cells and the Evolution of Life Laboratory	1
CHEM 112 General Chemistry II	4
CHEM 112L General Chemistry II Laboratory	1
MATH 175 Calculus II	4
Social and Behavioral Ways of Knowing Course	3
Hours	16
Spring Term 2	
CHEM 277 Organic Chemistry I	3
CHEM 278 Organic Chemistry I: Lab	1
PHYS 211 Engineering Physics I	3
PHYS 211L Laboratory Physics I	1
STAT 251 Statistical Methods or STAT 301 or Probability and Statistics	3
Social and Behavioral Ways of Knowing Course	3
Elective Course (MATH 275 recommended)	3
Hours	17
Fall Term 3	
BIOL 310 Genetics	3
BIOL 315 Genetics Lab	1
BIOL 380 Biochemistry I	4
BIOL 382 Biochemistry I Laboratory	2
CHEM 253 Quantitative Analysis	3
CHEM 254 Quantitative Analysis: Lab	2
Hours	15
Spring Term 3	
BIOL 312 Molecular and Cellular Biology	3
BIOL 313 Molecular and Cellular Laboratory	1
BIOL 454 Biochemistry II	3
CHEM 372 Organic Chemistry II	3
PHYS 212 Engineering Physics II	3
PHYS 212L Laboratory Physics II	1
Hours	14
Fall Term 4	
CHEM 302 OR CHEM 305 OR CHEM 306	3
ENGL 207 OR ENGL 208 OR ENGL 317 OR ENGL 318	3
Biochemistry, Major Elective Course	3
International Course	3
American Diversity Course	3
Hours	15
Spring Term 4	
BIOL 400 Seminar	1
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411	2
Biochemistry, Major Elective Course	3

American Diversity Course	3
Elective Course	3
Elective Course	2
Hours	14
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Learn and integrate: Through independent learning and collaborative study, students will attain, use, and develop knowledge in biology, chemistry, and related disciplines with specialization in biochemistry. Students will be able to integrate biological and chemical information to understand the biochemistry of molecules and living systems.
2. Think and create: Students will be able to use multiple thinking strategies to examine issues in biochemistry, including the proposal of biochemical hypotheses and the design and analysis of biochemical experiments capable of testing hypotheses. Students will be able to apply biochemical knowledge to real world challenges, such as those that may be encountered in medicine and other applied areas.
3. Communicate: Students will be able to acquire and analyze biochemical information from the scientific literature. Students will be able to communicate biochemical information via verbal, written, and other non-verbal methods such as appropriate graphics.
4. Clarify purpose and perspective: The program will allow student to explore biochemistry in the context of their career and life's purpose as well as to apply perspectives to novel issues or problems within biochemistry or other disciplines.
5. Practice citizenship: Students will understand and accept their roles as educated biochemists and scientists in society. Students will be able to communicate with others, including non-scientists, from the special perspective of an educated biochemist.

Biochemistry Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
BIOL 454	Biochemistry II	3
Select 12 credits from the following:		12
BIOL 382	Biochemistry I Laboratory	
CHEM 302 & CHEM 303	Principles of Physical Chemistry and Principles of Physical Chemistry Lab	
BIOL 400	Seminar	
BIOL 401	Undergraduate Research	
Total Hours		19

Courses to total 19 credits for this minor

Biology (B.A. or B.S.)

To graduate in this program, students must earn a minimum grade of 'C' in BIOL 114, BIOL 115, and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
BIOL 101	Opportunities in Biological Sciences	1
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 213	Structure and Function Across the Tree of Life	4
BIOL 300 or BIOL 380	Survey of Biochemistry Biochemistry I	3-4
BIOL 310	Genetics	3
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
BIOL 315	Genetics Lab	1
BIOL 400	Seminar	1-16
BIOL 421	Advanced Evolution/Population Dynamics	3
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4
MATH 170	Calculus I	4
STAT 251 or STAT 301	Statistical Methods Probability and Statistics	3
Select one of the following Senior Experience courses:		2-3
BIOL 401	Undergraduate Research (Max 8 credits)	
BIOL 407	Practicum in Biology Laboratory Teaching (Max 12 credits)	
BIOL 408	Human Anatomy and Physiology Laboratory Pedagogy (Max 8 credits)	
BIOL 411	Senior Capstone	
BIOL 425	Experimental Field Ecology	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select one of the following:		4
PHYS 112 & 112L	General Physics II and General Physics II Lab	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Select 14 credits of approved electives from the following:		14
BIOL 425	Experimental Field Ecology	
BIOL 428	Microscopic Anatomy	
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
BIOL 444	Genomics	
BIOL 447	Virology	

BIOL 456	Computer Skills for Biologists
BIOL 460	Advanced Field Botany
BIOL 461	Neurobiology
BIOL 474	Developmental Biology
BIOL 478	Animal Behavior
BIOL 482	Protein Structure and Function
BIOL 483	Mammalogy
BIOL 485	Prokaryotic Molecular Biology
BIOL 487	Cellular and Molecular Basis of Disease
BIOL 489	Herpetology
CHEM 473	Intermediate Organic Chemistry
ENT 411	Veterinary & Medical Entomology
ENT 438	Pesticides in the Environment
ENT 441	Insect Ecology
ENT 469	Introduction to Forest Insects
ENT 476	Medical Parasitology
MATH 437	Mathematical Biology
PLSC 440	Advanced Laboratory Techniques
PLSC 476	Cell Biology
PLSC 488	Genetic Engineering
WLF 440	Conservation Biology
WLF 448	Fish and Wildlife Population Ecology
WLF 482	Ornithology

Total Hours 79-96

Biology B.A. Students must also complete:

Code	Title	Hours
Two humanities courses in addition to the minimum university-wide general education requirements ¹		6
One Social Science course in addition to the minimum university-wide general education requirements ¹		3
0-16 credits in a foreign language ²		0-16
Total Hours		9-25

¹

Courses satisfying the humanities requirement are those dealing with the arts, literature, and philosophy. Courses satisfying the social science requirement are those courses dealing with a person's social condition including social relations, institutions, history, and participation in an organized community. Refer to online degree audit system through Web registration system or your academic advisor for a listing of appropriate courses.

²

Foreign Languages 0-16 credits (zero-four courses) competence in one foreign language equivalent to that gained by the completion of four semesters of college courses through the intermediate level. This requirement may be satisfied by the completion of either of the following options

- 16 credits or four high-school units in one foreign language, or
- 12 credits in one foreign language, and one three-credit course in literature translated from the same language. The 12 credits may be satisfied by three high-school units in one foreign language.

Courses to total 120 credits for this degree

Biology (B.A.) Four-Year Plan

Fall Term 1		Hours
BIOL 101	Opportunities in Biological Sciences	1
BIOL 114	Organisms and Environments	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
MATH 170	Calculus I	4
ENGL 101	Writing and Rhetoric I	3
Hours		16
Spring Term 1		Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
ENGL 102	Writing and Rhetoric II	3
STAT 251 OR STAT 301		3
Hours		15
Fall Term 2		Hours
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
B.A. Course Requirement		3
Hours		15
Spring Term 2		Hours
BIOL 213	Structure and Function Across the Tree of Life	4
BIOL 314	Ecology and Population Biology	4
(PHYS 112 AND PHYS 112L) OR (PHYS 212 AND PHYS 212L)		4
BA Course Requirement		3
Hours		15
Fall Term 3		Hours
BIOL 300 OR BIOL 380		3
ENGL 207 OR ENGL 208 OR ENGL 317 OR ENGL 318		3
Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
Oral Communications Course		3
Hours		15
Spring Term 3		Hours
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
Major Elective Course		4
Social and Behavioral Ways of Knowing Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		14
Fall Term 4		Hours
Major Elective Course		3
Major Elective Course		3
B.A. Course Requirement		3
American Diversity Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 4		Hours
BIOL 400	Seminar	1
BIOL 421	Advanced Evolution/Population Dynamics	3
International Course		3
B.A. Course Requirement		3
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411		2

Major Elective Course	3
Hours	15
Total Hours	120

Biology (B.A.) Five-Year Plan

Fall Term 1		Hours
BIOL 101	Opportunities in Biological Sciences	1
MATH 143	College Algebra	3
ENGL 101	Writing and Rhetoric I	3
MATH 144	Analytic Trigonometry	1
Oral Communication Course		3
B.A. Course Requirement		3
Hours		14
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
MATH 170	Calculus I	4
B.A. Course Requirement		3
Hours		14
Fall Term 2		Hours
BIOL 114	Organisms and Environments	4
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
B.A. Course Requirement		3
Hours		12
Spring Term 2		Hours
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 115	Cells and the Evolution of Life	3
B.A. Course Requirement		3
STAT 251 OR STAT 301		3
Hours		10
Fall Term 3		Hours
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Hours		12
Spring Term 3		Hours
BIOL 314	Ecology and Population Biology	4
BIOL 213	Structure and Function Across the Tree of Life	4
(PHYS 112 AND PHYS 112L) OR (PHYS 212 AND PHYS 212L)		4
Hours		12
Fall Term 4		Hours
Humanistic and Artistic Ways of Knowing Course		3
B.A. Course Requirement		3
BIOL 300 OR BIOL 380		3
ENGL 207 OR ENGL 208 OR ENGL 317 OR ENGL 318		3
Hours		12
Spring Term 4		Hours
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
American Diversity Course		3
Social and Behavioral Ways of Knowing Course		3
B.A. Course Requirement		3
Hours		13
Fall Term 5		Hours
Major Elective Course		3
Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3

B.A. Course Requirement	3
Hours	12
Spring Term 5	
BIOL 400 Seminar	1
BIOL 421 Advanced Evolution/Population Dynamics	3
Major Elective Course	3
International Course	3
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411 OR BIOL 425	2
Hours	12
Total Hours	123

Biology (B.S.) Four-Year Plan

	Hours
Fall Term 1	
BIOL 101 Opportunities in Biological Sciences	1
BIOL 114 Organisms and Environments	4
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
ENGL 101 Writing and Rhetoric I	3
MATH 170 Calculus I	4
Hours	16
Spring Term 1	
BIOL 115 Cells and the Evolution of Life	3
BIOL 115L Cells and the Evolution of Life Laboratory	1
CHEM 112 General Chemistry II	4
CHEM 112L General Chemistry II Laboratory	1
ENGL 102 Writing and Rhetoric II	3
STAT 251 OR STAT 301	3
Hours	15
Fall Term 2	
BIOL 310 Genetics	3
BIOL 315 Genetics Lab	1
CHEM 277 Organic Chemistry I	3
CHEM 278 Organic Chemistry I: Lab	1
Humanistic and Artistic Ways of Knowing Course	3
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)	4
Hours	15
Spring Term 2	
BIOL 213 Structure and Function Across the Tree of Life	4
BIOL 314 Ecology and Population Biology	4
Social and Behavioral Ways of Knowing Course	3
(PHYS 112 AND PHYS 112L) OR (PHYS 212 AND PHYS 212L)	4
Hours	15
Fall Term 3	
American Diversity Course	3
Humanistic and Artistic Ways of Knowing Course	3
Major Elective Course	3
BIOL 300 OR BIOL 380	3
ENGL 207 OR ENGL 208 OR ENGL 317 OR ENGL 318	3
Hours	15
Spring Term 3	
BIOL 312 Molecular and Cellular Biology	3
BIOL 313 Molecular and Cellular Laboratory	1
Social and Behavioral Ways of Knowing Course	3
Major Elective Course	3
Oral Communication Course	3
Hours	13
Fall Term 4	
Major Elective Course	3
Major Elective Course	3
International Course	3
Elective Course	3

Elective Course	3
Hours	15
Spring Term 4	
BIOL 400 Seminar	1
BIOL 421 Advanced Evolution/Population Dynamics	3
Major Elective Course	4
Elective Course	3
Elective Course	3
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411 OR BIOL 425	2
Hours	16
Total Hours	120

Biology (B.S.) Five-Year Plan

	Hours
Fall Term 1	
BIOL 101 Opportunities in Biological Sciences	1
BIOL 114 Organisms and Environments	4
MATH 143 College Algebra	3
ENGL 101 Writing and Rhetoric I	3
MATH 144 Analytic Trigonometry	1
Hours	12
Spring Term 1	
ENGL 102 Writing and Rhetoric II	3
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
MATH 170 Calculus I	4
Oral Communications Course	3
Hours	14
Fall Term 2	
CHEM 112 General Chemistry II	4
CHEM 112L General Chemistry II Laboratory	1
BIOL 115 Cells and the Evolution of Life	3
BIOL 115L Cells and the Evolution of Life Laboratory	1
Humanistic and Artistic Ways of Knowing Course	3
Hours	12
Spring Term 2	
General Education Course 2 cr. Elective Course	2
American Diversity Course	3
STAT 251 OR STAT 301	3
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)	4
Hours	12
Fall Term 3	
CHEM 277 Organic Chemistry I	3
CHEM 278 Organic Chemistry I: Lab	1
BIOL 310 Genetics	3
BIOL 315 Genetics Lab	1
Social and Behavioral Ways of Knowing Course	3
Elective Course	1
Hours	12
Spring Term 3	
BIOL 314 Ecology and Population Biology	4
BIOL 213 Structure and Function Across the Tree of Life	4
(PHYS 112 AND PHYS 112L) OR (PHYS 212 AND PHYS 212L)	4
Hours	12
Fall Term 4	
Major Elective Course	3
Humanistic and Artistic Ways of Knowing Course	3
BIOL 300 OR BIOL 380	3
ENGL 207 OR ENGL 208 OR ENGL 317 OR ENGL 318	3
Hours	12
Spring Term 4	
BIOL 312 Molecular and Cellular Biology	3

BIOL 313	Molecular and Cellular Laboratory	1
Major Elective Course		3
Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		13
Fall Term 5		
International Course		3
Major Elective Course		3
Major Elective Course		3
B.S. Course Requirement		3
Hours		12
Spring Term 5		
BIOL 400	Seminar	1
BIOL 421	Advanced Evolution/Population Dynamics	3
Major Elective Course		3
B.S. Course Requirement		3
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411 OR BIOL 425		2
Hours		12
Total Hours		123

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Learn and integrate: Through independent learning and collaborative study, students will attain, use, and develop knowledge in biology, chemistry, and related disciplines with specialization in biology. Students will be able to integrate biological and chemical information to understand living systems from the molecular to ecosystem level.
2. Think and create: Students will be able to use multiple thinking strategies to examine issues in biology, including the proposal of biological hypotheses and the design and analysis of biological experiments capable of testing hypotheses. Students will be able to apply biological knowledge to real world challenges, such as those that may be encountered in applied areas.
3. Communicate: Students will be able to acquire and analyze biological information from the scientific literature. Students will be able to communicate biological information via verbal, written, and other non-verbal methods such as appropriate graphics.
4. Clarify purpose and perspective: The program will allow students to explore biology in the context of their career and life's purpose as well as to apply perspectives to novel issues or problems within biology or other disciplines.
5. Practice citizenship: Students will understand and accept their roles as educated biologists and scientists in society. Students will be able to communicate with others, including non-scientists, from the special perspective of an educated biologist.

Biology (M.S.)

Master of Science. Majors in Biology and Neuroscience.

The M.S. program emphasizes research including (but not limited to) the departmental and multidisciplinary areas described above. Admission is based upon the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a

faculty member to be the student's mentor. An incoming student arranges a formal graduate program of at least 30 semester hours in consultation with their major professor and graduate committee. A laboratory research based thesis is required.

Please see the Biological Sciences graduate student handbook (<https://www.uidaho.edu/-/media/Uidaho-Responsive/Files/sci/biology/academics/graduate-studies/dept-resources/grad-student-handbook.pdf>) for details and program requirements on earning the Master of Science in Biology degree.

Biology Major

1. The student will develop and use knowledge in the sciences with disciplinary specialization and integrate that information across disciplines.
2. The student will be able to formulate hypotheses and conduct original research to test hypotheses.
3. The student will be able to use critical thinking to explore and understand real-world issues, solve problems, and make consequential decisions.
4. The student will be able to clearly communicate ideas, research findings, and conclusions using oral and written communication skills.
5. The student will be able to demonstrate awareness, understanding, sensitivity, tolerance, and respect for differences between individuals and societal groups in terms of their values, motivations, morals, and opinions.
6. The student will be able to apply high standards of ethical behavior in professional and personal interactions to advance knowledge, promote education, enhance a sense of community, and improve the general well being of others.

Neuroscience Major

1. The student will demonstrate in-depth knowledge of the degree subject matter, integrating and building upon the foundation provided by a relevant undergraduate degree.
2. The student will be able to do original research and to appropriately and accurately analyze the results.
3. The student will be able to communicate the results of their research in written and other appropriate formats.
4. The student will be able to apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities.
5. The student will be able to understand their responsibility to enhance the quality of life of the global community through research and/or professional practice.

Biology (Ph.D.)

Doctor of Philosophy. Majors in Biology; Microbiology, Molecular Biology, and Biochemistry (MMBB); and Neuroscience.

The Ph.D. program emphasizes research including (but not limited to) the departmental and multidisciplinary area described above. Admission is based upon the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to be the student's mentor. A doctoral student develops a

graduate program of at least 78 semester hours in consultation with their major professor and graduate committee. A laboratory research-based thesis is required.

Please see the Biological Sciences graduate student handbook (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/sci/biology/academics/graduate-studies/dept-resources/grad-student-handbook.pdf>) for details and program requirements on earning the PhD in Biology degree.

Biology Major

1. Through independent learning and collaborative study, attain, use, and develop knowledge in the sciences with disciplinary specialization and the ability to integrate information across disciplines.
2. Formulate hypotheses and conduct original research to test hypotheses.
3. Use critical thinking to explore and understand real-world issues, solve problems and make consequential decisions.
4. Clearly communicate ideas, research findings, and conclusions using oral and written communication skills.
5. Increase awareness, understanding, sensitivity, tolerance, and respect for differences between individuals and societal groups in terms of their values, motivations, mores, and opinions. Gain appreciation for how differences in personal histories and present circumstances shape the personal and professional perspectives of individuals.
6. Understand and apply high standards of ethical behavior in professional and personal interactions to advance knowledge, promote education, enhance a sense of community, and improve the general well being of others.

Microbiology, Molecular Biology, and Biochemistry Major

1. Formulate hypotheses and conduct original research to test hypotheses.
2. Use critical thinking to explore and understand real-world issues, solve problems, and make consequential decisions.
3. Have broad knowledge of the molecular life sciences and will have specific training and in-depth knowledge in a specialized aspect of Microbiology, Molecular Biology, or Biochemistry.
4. Clearly communicate ideas, research findings, and conclusions using oral and written communication skills.
5. Increase awareness, understanding, sensitivity, tolerance, and respect for differences between individuals and societal groups in terms of their values, motivations, mores, and opinions.
6. Gain appreciation for how differences in personal histories and present circumstances shape the personal and professional perspectives of individuals.
7. Understand and apply high standards of ethical behavior in professional and personal interactions to advance knowledge, promote education, enhance a sense of community, and improve the general well being of others.

Neuroscience Major

1. The student will be able to demonstrate expert knowledge in their specialty field.
2. The student will be able to advance the frontier of knowledge in their chosen research area.

3. The student will be able to communicate the results of their research in written and other appropriate formats.
4. The student will be able to demonstrate an understanding of their responsibility to enhance the quality of life of the global community through teaching, research, and/or the practice of science.

Biology Minor

Code	Title	Hours
BIOL 114	Organisms and Environments	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 213	Structure and Function Across the Tree of Life	4
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
BIOL 314	Ecology and Population Biology	4
Total Hours		24

Courses to total 24 credits for this minor

Medical Sciences (B.S.)

To graduate in this program, students must earn a minimum grade of 'C' in BIOL 115 and BIOL 115L. Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
BIOL 101	Opportunities in Biological Sciences	1
BIOL 151	Intro to Health Professions	1
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 227	Anatomy and Physiology I	4
BIOL 228	Anatomy and Physiology II	4
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	5
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312 & BIOL 313	Molecular and Cellular Biology and Molecular and Cellular Laboratory	4
BIOL 380	Biochemistry I	4
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4
MATH 170	Calculus I	4
PHIL 103	Introduction to Ethics	3
PSYC 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3
STAT 251 or STAT 301	Statistical Methods or Probability and Statistics	3
Select one of the following Physics sequences:		8
PHYS 111 & 111L	General Physics I and General Physics I Lab	

PHYS 112 & 112L	General Physics II and General Physics II Lab	
OR		
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Select 3 credits of Written Communication courses from the following:		3
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
Select one of the following Senior Capstone courses:		2
BIOL 401	Undergraduate Research (Max 8 credits)	
BIOL 407	Practicum in Biology Laboratory Teaching	
BIOL 408	Human Anatomy and Physiology Laboratory Pedagogy (Max 8 credits)	
BIOL 411	Senior Capstone	
Select one of the following:		3
ANTH/SOC 417	Social Data Analysis	
BIOL 456	Computer Skills for Biologists	
CHEM 302	Principles of Physical Chemistry	
MATH 437	Mathematical Biology	
STAT 431	Statistical Analysis	
Select 3 credits of Critical Thinking courses from the following:		3
ENGL 207	Persuasive Writing	
PHIL 201	Critical Thinking	
PHIL 202	Introduction to Symbolic Logic	
PHIL 417	Philosophy of Biology	
Select 2-3 credits of Leadership and Professional courses from the following:		2-3
BIOL 398	Internship	
INTR 492	College of Science Ambassadors (Max 8 credits)	
INTR 496	Pre-Health Peer Mentors (Max 4 credits)	
MHR 311	Introduction to Management	
PHIL 361	Professional Ethics (Max 6 credits)	
PSYC 414	Traumatic Events: Preparation, Intervention, Evaluation	
Select 6 credits of Psychology courses from the following:		6
PSYC 305	Developmental Psychology	
PSYC 311	Abnormal Psychology	
PSYC 325	Cognitive Psychology	
PSYC 372	Physiological Psychology	
PSYC 470	Introduction to Chemical Addictions	
PSYC 472	Introduction to the Pharmacology of Psychoactive Drugs	
Select 6 credits of Global and Cultural Competence courses from the following:		6
ANTH 327	Belief Systems	
COMM 335	Intercultural Communication	
FN 450	Global Nutrition	
HIST 380	Disease and Culture: History of Western Medicine	
JAMM 340	Media and Diversity	

POLS 385	Political Psychology	
SOC 201	Introduction to Inequity and Justice	
SOC 340	Environmental Sociology and Globalization	
SOC 427	Racial and Ethnic Relations	
Select 9 credits of Biomedical Sciences courses from the following:		9
BIOL 314	Ecology and Population Biology	
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 428	Microscopic Anatomy	
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
BIOL 444	Genomics	
BIOL 447	Virology	
BIOL 454	Biochemistry II	
BIOL 461	Neurobiology	
BIOL 474	Developmental Biology	
BIOL 482	Protein Structure and Function	
BIOL 487	Cellular and Molecular Basis of Disease	
CHEM 372	Organic Chemistry II	
CHEM 472	Medicinal Chemistry	
ENT 411	Veterinary & Medical Entomology	
ENT 476	Medical Parasitology	
FN 415	Advanced Nutrition	
H&S 450	Critical Health Issues	
H&S 451	Psychosocial Determinants of Health	
PSYC 473	Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB	

Total Hours **102-103**

Courses to total 120 credits for this degree

Four-Year Plan

Fall Term 1		Hours
BIOL 101	Opportunities in Biological Sciences	1
BIOL 151	Intro to Health Professions	1
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 101	Writing and Rhetoric I	3
MATH 170	Calculus I	4
PSYC 101	Introduction to Psychology	3
Hours		16
Spring Term 1		Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
ENGL 102	Writing and Rhetoric II	3
STAT 251 OR STAT 301		3
Hours		15
Fall Term 2		Hours
BIOL 227	Anatomy and Physiology I	4
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
SOC 101	Introduction to Sociology	3
Hours		16

Spring Term 2		
BIOL 228	Anatomy and Physiology II	4
PHIL 103	Introduction to Ethics	3
Oral Communication Course		3
ENGL 208 OR ENGL 317 OR ENGL 318		3
PSYC 305 OR PSYC 311 OR PSYC 325 OR PSYC 372 OR PSYC 470 OR PSYC 472		3
Hours		16
Fall Term 3		
BIOL 380	Biochemistry I	4
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
ENGL 207 OR PHIL 201 OR PHIL 202 OR PHIL 417		3
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Hours		15
Spring Term 3		
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
Elective Course		1
(PHYS 112 AND PHYS 112L) OR (PHYS 212 AND PHYS 212L)		4
ANTH 327 OR COMM 335 OR FN 450 OR HIST 380 OR JAMM 340 OR POLS 385 OR SOC 201 OR SOC 340		3
BIOL 398 OR INTR 492 OR INTR 496 OR MHR 311 OR PHIL 361 OR PSYC 414		2
Hours		14
Fall Term 4		
Humanistic and Artistic Ways of Knowing Course		3
BIOL 314 OR BIOL 421 OR BIOL 428 OR BIOL 432 OR BIOL 433 OR BIOL 444 OR BIOL 447 OR BIOL 454 OR BIOL 461 OR BIOL 474 OR BIOL 482 OR BIOL 487 OR CHEM 372 OR ENT 411 OR ENT 476 OR FN 415 OR H&S 450 OR H&S 451		3
BIOL 314 OR BIOL 421 OR BIOL 428 OR BIOL 432 OR BIOL 433 OR BIOL 444 OR BIOL 447 OR BIOL 454 OR BIOL 461 OR BIOL 474 OR BIOL 482 OR BIOL 487 OR CHEM 372 OR ENT 411 OR ENT 476 OR FN 415 OR H&S 450 OR H&S 451		3
ANTH 417 OR BIOL 456 OR CHEM 302 OR MATH 437 OR STAT 431		3
PSYC 305 OR PSYC 311 OR PSYC 325 OR PSYC 372 OR PSYC 470 OR PSYC 472		3
Hours		15
Spring Term 4		
International Course		3
Elective Course		3
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411		2
BIOL 314 OR BIOL 421 OR BIOL 428 OR BIOL 432 OR BIOL 433 OR BIOL 444 OR BIOL 447 OR BIOL 454 OR BIOL 461 OR BIOL 474 OR BIOL 482 OR BIOL 487 OR CHEM 372 OR CHEM 472 OR ENT 411 OR ENT 476 OR FN 415 OR H&S 450 OR H&S 451		3
ANTH 327 OR COMM 335 OR FN 450 OR HIST 380 OR JAMM 340 OR POLS 385 OR SOC 201 OR SOC 340		3
Hours		14
Total Hours		121

Five-Year Plan

Fall Term 1		
BIOL 101	Opportunities in Biological Sciences	1
BIOL 151	Intro to Health Professions	1
MATH 143	College Algebra	3
ENGL 101	Writing and Rhetoric I	3
MATH 144	Analytic Trigonometry	1
PSYC 101	Introduction to Psychology	3
Oral Communication Course		3
Hours		15
Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4

1 credit Elective Course		
Hours		12
Fall Term 2		
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
PHIL 103	Introduction to Ethics	3
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
Hours		12
Spring Term 2		
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
Elective Course		2
ENGL 208 OR ENGL 317 OR ENGL 318		3
STAT 251 OR STAT 301		3
Hours		12
Fall Term 3		
BIOL 227	Anatomy and Physiology I	4
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Hours		13
Spring Term 3		
BIOL 228	Anatomy and Physiology II	4
Psychology, Major Elective Course		3
Critical Thinking, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		13
Fall Term 4		
BIOL 380	Biochemistry I	4
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Hours		12
Spring Term 4		
BIOL 312	Molecular and Cellular Biology	3
BIOL 313	Molecular and Cellular Laboratory	1
Global and Cultural Competence Elective, Major Elective Course		3
Leadership & Prof., 2- Major Elective Course		3
(PHYS 112 AND PHYS 112L) OR (PHYS 212 AND PHYS 212L)		4
Hours		14
Fall Term 5		
Biomedical, Major Elective Course		3
Biomedical, Major Elective Course		3
Analysis/Comp/Math Skills, Major Elective Course		3
Psychology, Major Elective Course		3
Hours		12
Spring Term 5		
Biomedical, Major Elective Course		3
Global and Cultural Competence Elective, Major Elective Course		3
International Course		3
1 credit Elective Course		1
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411		2
Hours		12
Total Hours		127

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Registrar's Office regarding your official degree/certificate completion status.

1. Learn and integrate: Through independent learning and collaborative study, students will attain, use, and develop knowledge in biology, chemistry, and related disciplines with specialization in biology. Students will be able to integrate biological and chemical information to understand living systems from the molecular to population level with relevance to biomedical issues.
2. Think and create: Students will be able to use multiple thinking strategies to examine issues in biology, including the proposal of biological hypotheses and the design and analysis of biological experiments capable of testing hypotheses. Students will be able to apply biological knowledge to real world challenges, such as those that may be encountered in medicine.
3. Communicate: Students will be able to acquire and analyze biological information from the scientific literature. Students will be able to communicate biological information via verbal, written, and other non-verbal methods such as appropriate graphics.
4. Clarify purpose and perspective: The program will allow students to explore medical sciences and biology primarily in the context of a career in the biomedical sciences, as well as to apply a biomedical perspective to novel issues or problems within biology, medicine or other disciplines.
5. Practice citizenship: Students will understand and accept their roles as educated biologists and scientists in society. Students will be able to communicate with others, including non-scientists, from the special perspective of an educated biologist on issues related to medicine and other topics.

Microbiology (B.S.Microbiol.)

To graduate in this program, students must earn a minimum grade of 'C' in BIOL 114, BIOL 115, and BIOL 115L. Required coursework includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
BIOL 101	Opportunities in Biological Sciences	1
BIOL 114	Organisms and Environments	4
BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory	4
BIOL 250 & BIOL 255	General Microbiology and General Microbiology Lab	5
BIOL 310 & BIOL 315	Genetics and Genetics Lab	4
BIOL 312	Molecular and Cellular Biology	3
BIOL 350	Microbiomes	3
BIOL 380	Biochemistry I	4
BIOL 400	Seminar	1
Suggested elective lab components:		
BIOL 313 or BIOL 382	Molecular and Cellular Laboratory or Biochemistry I Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	4
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	5
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	4

CHEM 372	Organic Chemistry II	3
MATH 170	Calculus I	4
STAT 251 or STAT 301	Statistical Methods or Probability and Statistics	3
Select one of the following Senior Experience courses:		2-3
BIOL 401	Undergraduate Research	
BIOL 407	Practicum in Biology Laboratory Teaching	
BIOL 408	Human Anatomy and Physiology Laboratory Pedagogy	
BIOL 411	Senior Capstone	
BIOL 425	Experimental Field Ecology	
Select one of the following:		3
ENGL 207	Persuasive Writing	
ENGL 208	Personal & Exploratory Writing	
ENGL 317	Technical Writing II	
ENGL 318	Science Writing	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Select three of the following:		9
BIOL 419	Microbial Physiology	
BIOL 447	Virology	
BIOL 485	Prokaryotic Molecular Biology	
ENT 476	Medical Parasitology	
BIOL 432	Immunology	
BIOL 433	Pathogenic Microbiology	
Select 6 credits of Approved Electives from the following: ¹		6
ENT 476	Medical Parasitology	
BIOL 432	Immunology	
BIOL 314	Ecology and Population Biology	
FS 465	Wine Microbiology and Processing	
FS 466	Wine Microbiology and Processing Lab	
BIOL 421	Advanced Evolution/Population Dynamics	
BIOL 433	Pathogenic Microbiology	
BIOL 456	Computer Skills for Biologists	
BIOL 444	Genomics	
BIOL 447	Virology	
BIOL 482	Protein Structure and Function	
BIOL 485	Prokaryotic Molecular Biology	
BIOL 487	Cellular and Molecular Basis of Disease	
ENT 411	Veterinary & Medical Entomology	
FS 416 & FS 417	Food Microbiology and Food Microbiology Laboratory	
BIOL 419	Microbial Physiology	
MATH 437	Mathematical Biology	
PHIL 361 or PHIL 450	Professional Ethics or Ethics in Science	
PLSC 476	Cell Biology	
PLSC 488	Genetic Engineering	

SOIL 425	Microbial Ecology	
Total Hours		76-77

Courses to total 120 credits for this degree

1

Additional classes can be substituted with prior approval from advisor and chairperson.

Fall Term 1		Hours
BIOL 101	Opportunities in Biological Sciences	1
BIOL 114	Organisms and Environments	4
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Oral Communication Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Spring Term 1		Hours
CHEM 111L	General Chemistry I Laboratory	1
CHEM 111	General Chemistry I	3
ENGL 102	Writing and Rhetoric II	3
MATH 144	Analytic Trigonometry	1
MATH 170	Calculus I	4
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Hours		16
Fall Term 2		Hours
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 115	Cells and the Evolution of Life	3
CHEM 112L	General Chemistry II Laboratory	1
CHEM 112	General Chemistry II	4
Social and Behavioral Ways of Knowing Course		3
STAT 251 OR STAT 301		3
Hours		15
Spring Term 2		Hours
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
American Diversity Course		3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3
Hours		13
Fall Term 3		Hours
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 380	Biochemistry I	4
Suggested Optional Laboratory Requirement BIOL 382, Elective Course		2
Hours		15
Spring Term 3		Hours
BIOL 312	Molecular and Cellular Biology	3
Suggested Optional Laboratory Requirement BIOL 313, Elective Course		1
CHEM 372	Organic Chemistry II	3
BIOL 350	Microbiomes	3
Microbiology, Major Elective Course		3
ENGL 207 or ENGL 208 or ENGL 317 or ENGL 318		3
Hours		16
Fall Term 4		Hours
Microbiology, Major Elective Course		3
Microbiology, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3

Elective Course		2
Hours		14
Spring Term 4		Hours
BIOL 400	Seminar	1
Microbiology, Major Elective Course		3
Microbiology, Major Elective Course		3
Elective Course		3
Elective Course		2
BIOL 401 OR BIOL 407 OR BIOL 408 OR BIOL 411		2
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Learn and integrate: Through independent learning and collaborative study, students will attain, use, and develop knowledge in biology, chemistry, and related disciplines with specialization in microbiology. Students will be able to integrate biological and chemical information to understand microbiological systems from the molecular to population level with relevance to some applied issues such as medicine or environmental microbiology.
2. Think and create: Students will be able to use multiple thinking strategies to examine issues in microbiology, including the proposal of biological hypotheses and the design and analysis of biological experiments capable of testing hypotheses. Students will be able to apply microbiological knowledge to real world challenges, such as those that may be encountered in medicine or environmental microbiology.
3. Communicate: Students will be able to acquire and analyze biological information from the scientific literature. Students will be able to communicate biological information via verbal, written, and other non-verbal methods such as appropriate graphics.
4. Clarify purpose and perspective: The program will allow students to explore microbiology as a career as well as to apply microbiological and biological perspectives to novel issues or problems within microbiology, medicine, or other disciplines.
5. Practice citizenship: Students will understand and accept their roles as educated biologists and scientists in society. Students will be able to communicate with others, including non-scientists, from the special perspective of an educated microbiologist on issues related to medicine and other topics.

Microbiology Minor

Code	Title	Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 380	Biochemistry I	4
Select three courses from the following:		9-10
BIOL 432	Immunology	
BIOL 350	Microbiomes	
BIOL 419	Microbial Physiology	

BIOL 433	Pathogenic Microbiology
BIOL 447	Virology
BIOL 485	Prokaryotic Molecular Biology
BIOL 487	Cellular and Molecular Basis of Disease
FS 416	Food Microbiology
SOIL 425	Microbial Ecology

Total Hours **22-23**

Courses to total 22 credits for this minor

Molecular Biology and Biochemistry Minor

Code	Title	Hours
BIOL 380	Biochemistry I	4
BIOL 454	Biochemistry II	3
Select one of the following:		3
CHEM 302	Principles of Physical Chemistry	
CHEM 305	Physical Chemistry	
CHEM 306	Physical Chemistry II	
Select three courses from the following:		10
BIOL 382	Biochemistry I Laboratory	
BIOL 482	Protein Structure and Function	
BIOL 487	Cellular and Molecular Basis of Disease	
PLSC 476	Cell Biology	
PLSC 488	Genetic Engineering	
Total Hours		20

Courses to total 20 credits for this minor

Neuroscience (M.S.)

Master of Science. Majors in Biology and Neuroscience.

The M.S. program emphasizes research including (but not limited to) the departmental and multidisciplinary areas described above. Admission is based upon the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to be the student's mentor. An incoming student arranges a formal graduate program of at least 30 semester hours in consultation with their major professor and graduate committee. A laboratory research based thesis is required.

Biology Major

1. The student will develop and use knowledge in the sciences with disciplinary specialization and integrate that information across disciplines.
2. The student will be able to formulate hypotheses and conduct original research to test hypotheses.
3. The student will be able to use critical thinking to explore and understand real-world issues, solve problems, and make consequential decisions.
4. The student will be able to clearly communicate ideas, research findings, and conclusions using oral and written communication skills.

5. The student will be able to demonstrate awareness, understanding, sensitivity, tolerance, and respect for differences between individuals and societal groups in terms of their values, motivations, morals, and opinions.
6. The student will be able to apply high standards of ethical behavior in professional and personal interactions to advance knowledge, promote education, enhance a sense of community, and improve the general well being of others.

Neuroscience Major

1. The student will demonstrate in-depth knowledge of the degree subject matter, integrating and building upon the foundation provide by a relevant undergraduate degree.
2. The student will be able to do original research and to appropriately and accurately analyze the results.
3. The student will be able to communicate the results of their research in written and other appropriate formats.
4. The student will be able to apply principles of ethical leadership, collaborative engagement, socially responsible behavior, respect for diversity in an interdependent world, and a service-oriented commitment to advance and sustain local and global communities.
5. The student will be able to understand their responsibility to enhance the quality of life of the global community through research and/or professional practice.

Department of Chemistry

Ray von Wandruszka, Dept. Chair (116 Malcolm M. Renfrew Hall 83844-2343; phone 208-885-6552; chemoff@uidaho.edu).

Chemistry is the central science: the foundation on which a variety of applied and nonapplied disciplines build. Chemistry deals with the composition, structure, and properties of substances and the changes they undergo. It is the study of the materials of which the entire universe is composed. Chemistry graduates will find an impressive array of options and exciting opportunities in fields such as basic research, environmental protection, instrumentation, the search for and synthesis of new therapeutic drugs, new product and process development, technical marketing, market research, forensic chemistry, teaching at any level, and information science. Moreover, an education in chemistry is valuable in health sciences such as medicine, pharmacology, clinical chemistry, and industrial hygiene. It can be useful as well in nontechnical areas such as advertising, journalism, patent law, banking, and investment counseling. The options are bounded only by the limits of one's imagination.

There are four distinct undergraduate curricula, each designed to meet a wide range of professional needs. The professional option is the curriculum of choice for students who are interested in practicing chemistry as a career, including graduate study for an advanced degree in chemistry or a related field. The degree is certifiable to the American Chemical Society. The general chemistry option provides a suitable foundation for those students needing a strong background in chemistry, but not necessarily aspiring to become professional chemists, such as those in Education or Chemical Engineering. The pre-medical option has been designed to serve the needs of those students interested in careers in medicine, pharmacy, dentistry, or other health related fields. The forensics option is a full-fledged chemistry degree that prepares students for a career in forensic science.

Students majoring in chemistry at UI have the very good fortune to interact with an award-winning, distinguished teaching faculty. They

have a unique opportunity to participate in undergraduate research in a nurturing environment where they work side by side with graduate students, postdoctoral fellows, and faculty members. Often, the research carried out by undergraduates results in publications in leading chemical journals. As a result of the strong research programs in the department, undergraduates have the opportunity in their courses to have hands-on experience with, or to acquire data from, modern sophisticated instrumentation such as FT nuclear magnetic resonance spectrometers, gas chromatographs interfaced with mass spectrometers, and laser Raman, infrared and ultraviolet spectrometers, in addition to the more classical techniques. Considerable use of computers is made in laboratory courses and as an aid to instruction. Because our students receive a first-class education, they are in demand by prospective employers and graduate schools.

The Chemistry Department trains its B.S. graduates to attain a high level of familiarity with:

- basic chemical concepts and fundamental chemical processes;
- organic synthesis and characterization;
- analytical and environmental approaches and problem solving;
- inorganic, material, and nuclear chemical concepts and applications; and
- physical chemical aspects of natural systems and theoretical modeling thereof.

In the course of their studies, students will acquire:

- strong lab techniques and synthetic skills;
- familiarity with the chemical literature and relevant search techniques;
- an awareness of safety issues;
- communication skills;
- problem solving skills;
- basic research skills; and
- a sense of professionalism and competence.

M.S. and Ph.D. degrees are offered in chemistry with concentrations in analytical, inorganic, organic, and physical chemistry.

Entering graduate students (master's and doctoral candidates) are expected to demonstrate proficiency in chemistry by taking a series of four examinations in the areas of analytical (qualitative, quantitative, and instrumental), inorganic, organic (including qualitative organic analysis), and physical chemistry. These must be taken at the first offering after the student's arrival. These examinations are offered immediately before registration week of the fall and spring semesters. Questions are at an advanced undergraduate level.

Students who score at greater than the 50th percentile (established nationally) on a qualifying examination may begin with a 500-level course in that area in their first semester and are given credit for the relevant 400-level course (CHEM 455, CHEM 466, CHEM 476, and/or CHEM 496). Students who score below the 50th percentile on an examination will begin course work in the respective area: analytical, CHEM 454 (the lab in this course may be bypassed by petition if the student can present evidence of adequate exposure; previous course at B level); CHEM 495; CHEM 463, CHEM 473.

All candidates for the M.S. or Ph.D. degree in chemistry are required to have teaching experience, here or elsewhere, as part of their training and

will complete CHEM 506 (Introduction to Teaching and Research Skills) at their first opportunity on entering the program.

Chemistry graduate students will acquire advanced perspectives in analytical, inorganic, organic, and physical chemistry. They will gain a detailed understanding of the problems, challenges, and opportunities in their chosen subdiscipline, and an in-depth familiarity with the theoretical underpinnings and methodologies in their specific research area. Graduate students will also acquire skills in teaching, directing, and mentoring others.

Majors

- Chemistry (B.S.) (p. 461)

Minors

- Chemistry Minor (p. 466)

Graduate Programs

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Chemistry. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Chemistry (M.S.) (p. 465)
- Chemistry (Ph.D.) (p. 466)

Chemistry (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and completion of one of the following options.

A. General Option

This degree provides the basic elements needed for a career in chemistry. It is especially suited for students who wish to enter other professions that require a background in science, including high school teaching, patent law, and technology management.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3

PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Select one of the following:		3-4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
PHYS 213	Engineering Physics III	

Total Hours 49-50

Courses to total 120 credits for this degree

B. Professional Option

Note: Students who complete this option will be certifiable to the American Chemical Society.

This curriculum provides a suitable background for students wishing to enter the profession of chemistry or to pursue graduate study for an advanced degree in chemistry or a related field.

Code	Title	Hours
BIOL 380	Biochemistry I	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
CHEM 454	Instrumental Analysis	3-4
CHEM 463	Inorganic Chemistry	3
CHEM 464	Inorganic Chemistry	3
CHEM 465	Inorganic Chemistry Laboratory	1
CHEM 491	Research (Max 12 credits)	2
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Select one of the following:		3-4
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
PHYS 213	Engineering Physics III	
Select two advanced Chemistry courses approved by the Chemistry Department in accordance with American Chemical Society stipulations		6
Total Hours		71-73

Courses to total 120 credits for this degree

C. Pre-Medical Option

This curriculum provides a suitable foundation in chemistry for students who intend to enter careers in medicine, dentistry, pharmacy, etc.

Code	Title	Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 380	Biochemistry I	4
BIOL 382	Biochemistry I Laboratory	2
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
CHEM 472	Medicinal Chemistry	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Chemistry Elective		6-7
CHEM 454	Instrumental Analysis	
CHEM 473	Intermediate Organic Chemistry	
Total Hours		69-70

Courses to total 120 credits for this degree

D. Forensics Option

Code	Title	Hours
Select any CS courses numbered 101 or higher		3
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
BIOL 380	Biochemistry I	4
BIOL 382	Biochemistry I Laboratory	2
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4

CHEM 112L	General Chemistry II Laboratory	1
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
CHEM 409	Proseminar	1
CHEM 454	Instrumental Analysis (Max 4 credits)	3-4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
STAT 251	Statistical Methods	3
Select one of the following:		3-4
BIOL 310	Genetics	
& BIOL 315	and Genetics Lab	
GENE 314	General Genetics	
Select one of the following:		3-4
PHYS 212	Engineering Physics II	
& 212L	and Laboratory Physics II	
PHYS 213	Engineering Physics III	

Total Hours **76-79**

Courses to total 120 credits for this degree

General Option

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
Oral Communication Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		2
Hours		15
Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Hours		14
Fall Term 2		
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Elective Course		3
Hours		16
Spring Term 2		
CHEM 277	Organic Chemistry I	3

CHEM 278	Organic Chemistry I: Lab	1
MATH 275	Calculus III	3
Social and Behavioral Ways of Knowing Course		3
American Diversity Course		3
Elective Course		3

Hours **16**

Fall Term 3		
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
Humanistic and Artistic Ways of Knowing Course		3
(PHYS 212 AND PHYS 212L)		3

Hours **15**

Spring Term 3		
CHEM 308	Physical Chemistry Lab	1
CHEM 306	Physical Chemistry II	3
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
International Course		3
Elective Course		3

Hours **14**

Fall Term 4		
CHEM 409	Proseminar	1
Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		2

Hours **15**

Spring Term 4		
Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3

Hours **15**

Total Hours **120**

Professional Option

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3
Elective Course		2

Hours **15**

Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
Social and Behavioral Ways of Knowing Course		3

Hours **14**

Fall Term 2		
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1

Humanistic and Artistic Ways of Knowing Course	3
Hours	16
Spring Term 2	
CHEM 277 Organic Chemistry I	3
CHEM 278 Organic Chemistry I: Lab	1
MATH 275 Calculus III	3
Elective Course	3
(PHYS 212 AND PHYS 212L)	4
Hours	14
Fall Term 3	
BIOL 380 Biochemistry I	4
CHEM 253 Quantitative Analysis	3
CHEM 254 Quantitative Analysis: Lab	2
CHEM 305 Physical Chemistry	3
CHEM 307 Physical Chemistry Lab	1
Elective Course	3
Hours	16
Spring Term 3	
CHEM 306 Physical Chemistry II	3
CHEM 308 Physical Chemistry Lab	1
International Course	3
Social and Behavioral Ways of Knowing Course	3
Advanced Chemistry, Major Elective Course	3
Elective Course	3
Hours	16
Fall Term 4	
CHEM 372 Organic Chemistry II	3
CHEM 374 Organic Chemistry II: Lab	1
CHEM 463 Inorganic Chemistry	3
Advanced Chemistry, Elective Course	3
Elective Course	3
Elective Course	2
Hours	15
Spring Term 4	
CHEM 409 Proseminar	1
CHEM 454 Instrumental Analysis	4
CHEM 464 Inorganic Chemistry	3
CHEM 465 Inorganic Chemistry Laboratory	1
CHEM 491 Research	2
American Diversity Course	3
Hours	14
Total Hours	120

Pre-Medical Option

	Hours
Fall Term 1	
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
MATH 144 Analytic Trigonometry	1
Humanistic and Artistic Ways of Knowing Course	3
Oral Communication Course	3
Elective Course	2
Hours	15
Spring Term 1	
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
ENGL 102 Writing and Rhetoric II	3
MATH 170 Calculus I	4
Social and Behavioral Ways of Knowing Course	3
Hours	14
Fall Term 2	
BIOL 115 Cells and the Evolution of Life	3

BIOL 115L Cells and the Evolution of Life Laboratory	1
MATH 175 Calculus II	4
PHYS 211 Engineering Physics I	3
PHYS 211L Laboratory Physics I	1
Humanistic and Artistic Ways of Knowing Course	3
Hours	15
Spring Term 2	
CHEM 112 General Chemistry II	4
CHEM 112L General Chemistry II Laboratory	1
MATH 275 Calculus III	3
PHYS 212 Engineering Physics II	3
PHYS 212L Laboratory Physics II	1
Elective Course	3
Hours	15
Fall Term 3	
CHEM 253 Quantitative Analysis	3
CHEM 254 Quantitative Analysis: Lab	2
CHEM 277 Organic Chemistry I	3
CHEM 278 Organic Chemistry I: Lab	1
CHEM 305 Physical Chemistry	3
CHEM 307 Physical Chemistry Lab	1
Elective Course	3
Hours	16
Spring Term 3	
CHEM 306 Physical Chemistry II	3
CHEM 308 Physical Chemistry Lab	1
CHEM 372 Organic Chemistry II	3
CHEM 374 Organic Chemistry II: Lab	1
International Course	3
Social and Behavioral Ways of Knowing Course	3
Elective Course	3
Hours	17
Fall Term 4	
BIOL 380 Biochemistry I	4
BIOL 382 Biochemistry I Laboratory	2
CHEM 409 Proseminar	1
CHEM 472 Medicinal Chemistry	3
CHEM 473 Intermediate Organic Chemistry	3
Elective Course	2
Hours	15
Spring Term 4	
CHEM 454 Instrumental Analysis	4
Elective Course	3
American Diversity Course	3
Humanistic and Artistic Ways of Knowing Course	3
Hours	13
Total Hours	120

Forensics Option

	Hours
Fall Term 1	
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
ENGL 101 Writing and Rhetoric I	3
MATH 170 Calculus I	4
Oral Communication Course	3
Humanistic and Artistic Ways of Knowing Course	3
Hours	17
Spring Term 1	
BIOL 115L Cells and the Evolution of Life Laboratory	1
BIOL 115 Cells and the Evolution of Life	3
CHEM 112 General Chemistry II	4

CHEM 112L	General Chemistry II Laboratory	1
ENGL 102	Writing and Rhetoric II	3
MATH 175	Calculus II	4
Hours		16
Fall Term 2		
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
MATH 275	Calculus III	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		16
Spring Term 2		
CHEM 372	Organic Chemistry II	3
CHEM 374	Organic Chemistry II: Lab	1
GEOL 101	Physical Geology	3
GEOL 101L	Physical Geology Lab	1
STAT 251	Statistical Methods	3
(PHYS 212 AND PHYS 212L)		3
Hours		14
Fall Term 3		
BIOL 310	Genetics	3
BIOL 315	Genetics Lab	1
BIOL 380	Biochemistry I	4
BIOL 382	Biochemistry I Laboratory	2
CHEM 305	Physical Chemistry	3
CHEM 307	Physical Chemistry Lab	1
Hours		14
Spring Term 3		
CHEM 306	Physical Chemistry II	3
CHEM 308	Physical Chemistry Lab	1
International Course		3
Computer Science, Major Elective Course		3
Elective Course		3
Hours		13
Fall Term 4		
BIOL 250	General Microbiology	3
BIOL 255	General Microbiology Lab	2
CHEM 409	Proseminar	1
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Hours		15
Spring Term 4		
CHEM 454	Instrumental Analysis	4
Social and Behavioral Ways of Knowing Course		3
American Diversity Course		3
Elective Course		3
Elective Course		2
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

General Option

1. The student will be able demonstrate the ability to make positive and creative contributions to chemical research.
2. The student will demonstrate investigative skills in applied or theoretical research.
3. The student will demonstrate competence in critical proficiencies necessary for a professional chemist, including problem solving skills, chemical literature and information management skills, laboratory safety skills, and team/networking skills.
4. The student will demonstrate practical laboratory skills.
5. The student will demonstrate broad knowledge of the subdisciplines of chemistry.
6. The student will be able to communicate acquired knowledge to an audience of peers, presenting information in a clear and organized manner.
7. The student will be able to write well-organized and concise reports in a scientifically appropriate style.

Forensics Option

1. The student will partake in chemical research through positive and creative contributions.
2. The student will communicate acquired knowledge to audience of peers.
3. The student will gain broad knowledge in the four subdisciplines of chemistry.

Chemistry (M.S.)

Master of Science. Major in Chemistry.

1. Thesis option: General M.S. requirements apply. At least one credit must be earned in CHEM 501 Seminar.
2. Non-thesis option: A minimum of 30 credits in course work is required and must be divided among the following:
 - a. 20 credits in chemistry courses numbered 500 or above (including one credit in CHEM 501 Seminar);
 - b. 10 credits in chemistry courses numbered 400 or above, or related courses numbered 300 or above. A written and/or oral examination that covers graduate course work must be taken during the final semester in residence.

Please see General Requirements for Graduate Students in Chemistry (<https://www.uidaho.edu/-/media/UIDaho-Responsive/Files/sci/chem/graduate/generalrequirementsanddepartmentaloliciesforgraduatestudentsinchemistry.pdf?la=en&hash=A8ACCB76A132285973DA95219B99890EA090149>) for details and program requirements on earning the Master of Science in Chemistry degree.

1. The student will be able to design methods for investigating chemical questions and hypotheses; generate and record quantitative and qualitative data; and generate conclusions based upon evidence supported by results.
2. The student will be able to demonstrate specialized knowledge in a chemical subdiscipline.
3. The student will be able to identify complex scientific problems by searching and reviewing the scientific literature.
4. The student will be able to investigate chemical problems using experimental and theoretical methodologies.

- The student will be aware of, and adhere to, ethical behavior intrinsic to the scientific process of knowledge generation.
- The student will be able to communicate research results to knowledgeable, but not necessarily expert, audiences.
- The student will be able to convey the major tenets of chemical work orally and in writing to students, peers and the lay public.

Chemistry (Ph.D.)

Doctor of Philosophy. Major in Chemistry.

The student will enroll for at least 33 credit hours in courses. All students will take CHEM 509 and obtain two credits in CHEM 501. In addition, sufficient credit hours of research will be completed to meet a total minimum registration requirement of 78 credits.

The student is encouraged to take courses in related fields, e.g., mathematics, physics, chemical engineering, geochemistry, computer science, electronics, or biochemistry. This work can be designated as the minor or supporting field on the study program.

All Ph.D. candidates are required to participate in seminars (CHEM 501) while in residence, even though not formally registered for credit in this course. Registration may be for zero credit.

Cumulative examinations are general examinations in the student's field of specialization to judge the breadth of knowledge gained by the student from courses, lectures, and the literature, as well as the ability to use this knowledge in the solution of a variety of problems. Once started, a student must continue to take these examinations each time they are offered whenever the student is in residence and is eligible. If a given examination is not taken, a failing grade is received. Examinations are approximately three hours in length and are given four times each semester and, in exceptional cases, during the summer session. Normally, students will take examinations only in the chosen area of concentration, but they may elect to take them in other areas of chemistry. The student must obtain an average grade of 50% in eight examinations to continue in the Ph.D. program.

Shortly after completing the final cumulative examination, Ph.D. students are required to submit a written proposal on their doctoral research project and defend it at an oral examination by their graduate committee (CHEM 590). The proposal will be limited to a maximum of 5,000 words, excluding the bibliography, and will consist of a statement of the proposed doctoral research problem, an in-depth discussion of the relevant literature, a listing of the major research objectives, a summary of the proposed experimental work plan, and an appropriate bibliography.

Please see General Requirements for Graduate Students in Chemistry (<https://www.uidaho.edu/-/media/Uidaho-Responsive/Files/sci/chem/graduate/generalrequirementsanddepartmentaloliciesforgraduatestudentsinchemistry.pdf>) for details and program requirements on earning the PhD in Chemistry degree.

- The student will be able to conduct independent research that makes a significant contribution to the chosen chemical field.
- The student will be able to effectively design and carry out experiments and/or theoretical studies leading to new insights or practical, applicable results.
- The student will be able to identify new research avenues and devise effective strategies for pursuing these opportunities.

- The student will be able to demonstrate a deep working knowledge of the principles, techniques, and concepts of contemporary chemistry.
- The student will demonstrate a thorough familiarity with the chemical literature.
- The student will understand and practice the ethical conduct of research.
- The student will be aware of, and prepared for, career opportunities with an advanced degree in chemistry.
- The student will communicate scientific principles, including their own results, to knowledgeable, but not necessarily expert, audiences.
- The student will be able to educate students interested in chemical sciences.
- The student will be able to communicate clearly and effectively within and across disciplinary lines.

Chemistry Minor

This program is designed to give a non-chemistry major a sufficient background in general chemistry and laboratory techniques to improve their employment prospects as a laboratory technician and to improve the technical background of the student interested in science education or communication.

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CHEM 253	Quantitative Analysis	3
CHEM 254	Quantitative Analysis: Lab	2
CHEM 277	Organic Chemistry I	3
CHEM 278	Organic Chemistry I: Lab	1
CHEM 302	Principles of Physical Chemistry	3
CHEM 303	Principles of Physical Chemistry Lab	1
CHEM 372	Organic Chemistry II	3
Total Hours		25

Courses to total 25 credits for this minor

Department of Earth and Spatial Sciences

Alistair Smith, Chair 201/203 McClure Hall, 83844-3021; phone 208-885-6216; earth-sciencerocks@uidaho.edu; <https://www.uidaho.edu/sci/ess> (<https://www.uidaho.edu/sci/ess/>).

Overview

The Department of Earth and Spatial Sciences provides programs in both geology and geography to satisfy the needs of a wide variety of students seeking professional careers in the geosciences.

Geology is the study of the origin and evolution of the earth, emphasizing the concepts of geologic time and plate tectonics. The applied aspects of geology include the search for hydrocarbons, ores, and water; the assessment of geologic hazards associated with earthquakes, volcanoes, and landslides; and the study of the global environment. Also included

in these studies are geologic aspects of waste disposal and pollution abatement.

Geography is the science of place and space. Geographers ask where things are located on the Earth, why they are located where they are, how places differ from one another and change over time, and how people interact with the environment. Geography is organized into four primary branches: human geography, physical geography, human-environment interaction, and geospatial methods. Human geography is concerned with the spatial aspects of politics, economics, culture, and sustainability. Physical geographers study patterns of climates, landforms, vegetation, soils, and water. Human-environment geographers investigate the connections between the two and the impacts of natural hazards on society. Geospatial methods are useful tools for understanding our complex world, which include spatial analysis, Geographic Information Systems (GIS), remote sensing, and mapping platforms.

Undergraduate Programs

To prepare students for many rewarding and important career opportunities, the Department of Earth and Spatial Sciences in the College of Science offers B.S. degrees in both Geology and Geography, minors in both Geology and Geography, and certificates in both Geographic Information Systems and Climate Change.

Students benefit from close contact with their instructors and hands-on experience within their coursework and through internships with industries and agencies involved in geologic, geographic, GIS, and cartographic applications.

The bachelor's degree in geology emphasizes practical and field science along with theory. It is the goal of the department that our graduates not only be ready for immediate employment, but also that they have the broad education that will help them to grow professionally, be successful in graduate school, and advance through positions of greater responsibility during their careers. Degree options are available in physical geology, environmental hydrogeology, and geologic education.

Minors in geology and geography are offered for students in allied fields who have an interest in geology or geography or both. The minor curriculum for either program can be tailored to meet the needs of individual students.

Graduate Programs

M.S. and Ph.D. degrees in geology and geography are offered.

The undergraduate preparation expected of the entering graduate candidates depends upon the degree sought. Some of our most promising graduate students have come to us with bachelor's degrees in other subjects. Deficiencies for master's candidates are determined by the major professor. Students may be required to complete some undergraduate courses in the department to provide adequate background.

Geography graduate programs provide training in research methods and applications of theory and spatial modeling to problems in regional development, cartography, and the physical environment. Students learn problem definition, research design, and data analysis using a variety of techniques including GIS, remote sensing, spatial analysis, and computer assisted cartography.

The geology program provides the student with the necessary background courses in cognate sciences and mathematics plus a spectrum of courses in the sub-disciplines of geology. Specialized

elective courses can be chosen to prepare for various careers such as exploration for minerals or petroleum, the search for and management of ground water, environmental geology, and earth science education.

Research laboratories are equipped for work in applied dendrochronology, economic geology, geochemistry, geochronology, geographical and spatial analysis, geomechanics, geophysics, GIS, hydrogeology, mineralogy, paleontology, petrology, structural analysis, tectonics, and volcanology. Laboratories are maintained for work in all of the basic courses, with large study collections of fossils, rocks, minerals, crystal models, maps, ore suites, thin sections, polished sections, and topographic and geologic maps. Equipment used in advanced courses includes several sets of microscopes, photomicrographic apparatus, x-ray diffraction equipment, and a variety of instruments for geochemical analysis. Also available are computers, resistivity survey equipment, gravity meters, GPS receivers, seismographs, a magnetometer, soil drilling and sampling kits, and water-level recorders.

Undergraduate Geospatial Information Systems Certificate

The GIS certificate is designed to serve students to enhance their educational foundation in Geographical Information Systems (GIS) or to strengthen their GIS credentials. GIS is the computer technology that uses digital information about earth surface features and location patterns to produce useful maps and analytical solutions to complex problems in physical, environmental, social, and economic sciences. Applications of GIS have expanded continuously during the past decade and GIS software has become very powerful, enabling complex problem solving in a wide variety of public and private sector settings worldwide.

Requirements for this program are listed on the website: www.uidaho.edu/sci/geography (<http://www.uidaho.edu/sci/geography/>).

Undergraduate Climate Change Certificate

There is a need for personnel who have a working knowledge of the science of climate change, its potential impacts, and adaptation and mitigation strategies to build climate resilient societies and landscapes.

Careers include scientists quantifying impacts, mitigation, and adaptation and practitioners and managers minimizing effects in natural and human systems.

Requirements for this program are listed on the website: www.uidaho.edu/sci/geography (<http://www.uidaho.edu/sci/geography/>).

Career Opportunities

Geology, Geography, and GIS applications continue to be among the fastest-growing job markets worldwide. Most industry jobs today involve the use and adaptation of Geographic Information Systems in both the public and private sectors. Geologists and geographers work in industry using their skills in research, location analysis, site selection, mapping, and management of geographical information with the aid of computers. Industrial jobs for geographers range from research, planning, and data management in primary resources to deciding where to locate a new supermarket or shopping mall. Many jobs for geographers involve computer mapping or GIS. Cartographers from our program are employed in a variety of positions working with map design, graphics, and production cartography. There are increasing opportunities for geographers with the area studies and global systems

options in international employment with government agencies and NGOs. Geographers are also employed in the public and private sector monitoring air and water quality, managing natural resources, and addressing other environmental and land management issues. The department arranges student internships with industries and agencies to provide on-the-job training as well as maintains a close relationship with the U of I Career Services Center to aid students in their search for employment.

Faculty members in the Earth and Spatial Sciences department emphasize quantitative methods and rigorous problem formulation. In addition, critical approaches and qualitative methods are employed. Geology and Geography faculty will answer questions about specific programs and courses. Prospective majors in either Geology or Geography should contact the department offices (Geology 208-885-6192 or Geography 208-885-6216) or visit the department's website (<https://www.uidaho.edu/sci/geo/>).

Majors

- Earth and Spatial Sciences (B.S.) (p. 470)
- Geographical Information Systems (B.S.) (p. 476)
- Geology (B.S.) (p. 478)
- Climate Change and Solutions (B.S.) (p. 468)

Minors

- Geography Minor (p. 478)
- Geology Minor (p. 482)
- Groundwater Hydrology Minor (p. 483)

Certificates

- Climate Change Undergraduate Academic Certificate (p. 470)
- Environmental Hydrogeology Undergraduate Academic Certificate (p. 473)
- Geographic Information Systems Undergraduate Academic Certificate (p. 475)

Graduate Programs

- Geographic Information Science (M.S.) (p. 474)
- Geography (M.S.) (p. 477)
- Geography (Ph.D.) (p. 478)
- Geology (M.S.) (p. 482)
- Geology (Ph.D.) (p. 482)
- Groundwater Hydrology (M.S.) (p. 482)

Academic Certificates

- Climate Change Graduate Academic Certificate (p. 469)
- Geographic Information Systems Graduate Academic Certificate (p. 475)

Climate Change and Solutions (B.S.)

Required coursework includes the university requirements (see regulation J) and:

Code	Title	Hours
ENGL 317 or ENGL 318	Technical Writing II Science Writing	3

ENGL 322	Climate Change Fiction	3
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	4
or GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
or GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
or GEOL 102 & 102L	Historical Geology and Historical Geology Lab	
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
GEOG 301	Meteorology	3
GEOG 313	Global Climate Change	3
GEOG 385	Foundations of GIS	3
GEOG 401	Climatology	3
GEOG 411	Natural Hazards and Society	3
GEOG 430	Climate Change Ecology	3
GEOG 435	Climate Change Mitigation	3
GEOG 488	Geography of Energy Systems	3
GEOG 493	Senior Capstone in Geography	3
GEOL 212	Dinosaurs and Prehistoric Life	4
MATH 143	College Algebra	3
SOC 101	Introduction to Sociology	3
SOC 466	Climate Change and Society	3
SOIL 436	Principles of Sustainability	3
STAT 251	Statistical Methods	3
Select one of the following courses:		3
IS 322	International Environmental Governance	
NRS/POLS 462	Natural Resource Policy	
POLS 364	Politics of the Environment	
Select at least 18 credits from Elective Bin 1 and at least 9 credits from Elective Bin 2.		27
<i>Elective Bin 1 (Biophysical Science)</i>		
BE 453	Northwest Climate and Water Resources Change	
GEOG 317	Tree Rings and Environmental Change	
GEOL 309	Ground Water Hydrology	
GEOL 435	Glaciology and the Dynamic Frozen Earth	
GEOL 462	Petroleum Systems and Stratigraphic Concepts	
GEOL 467	Volcanology (* Only will count for one track)	
GEOL 471	Ore Deposits and Exploration	
<i>Elective Bin 2 (Human Dimensions)</i>		
ENVS 415	Environmental Lifecycle Assessment	
ENVS/AGEC 477	Law, Ethics, and the Environment	
ENVS 484	History of Energy	
ENVS 485	Energy Efficiency and Conservation	
GEOG 350	Sustainability of Global Development	
GEOG 420	Land, Resources, and Environment	
GEOL 467	Volcanology	
IS 322	International Environmental Governance	
NRS/POLS 462	Natural Resource Policy	

POLS 364	Politics of the Environment
SOC 465	Environmental Justice
SOIL 210	Introduction to Food Systems
SOIL 427	Sustainable Food Systems
Total Hours	92

Note that GEOL 467 Volcanology only counts for one bin. If NRS/POLS 462, IS 322, or POLS 364 are taken as part of the core curriculum they do not count for credit in Elective Bin 2

Courses to total 120 credits for this degree.

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
GEOG 100 & 100L	Introduction to Planet Earth or Physical Geology and Physical Geology Lab or Physical Geology for Science Majors and Physical Geology for Science Majors Lab or Historical Geology and Historical Geology Lab	4
or GEOL 101 and GEOL 101L or GEOL 111 and GEOL 111L or GEOL 102 and GEOL 102L		
Oral Communication Course		3
Elective Course		2
MATH 143	College Algebra	3
or MATH 160 or MATH 170 or MATH 175	or Survey of Calculus or Calculus I or Calculus II	
Hours		15
Spring Term 1		Hours
ENGL 102	Writing and Rhetoric II	3
GEOG 165	Human Geography	3
SOC 101	Introduction to Sociology	3
STAT 251	Statistical Methods	3
Humanistic and Artistic Ways of Knowing Course (ENGL 322 rec)		3
Hours		15
Fall Term 2		Hours
GEOL 212	Dinosaurs and Prehistoric Life	4
GEOG 313	Global Climate Change	3
ENGL 317 or ENGL 318	Technical Writing II or Science Writing	3
Scientific Ways of Knowing Course (if needed)		4
Elective		1
Hours		15
Spring Term 2		Hours
GEOG 385	Foundations of GIS	3
GEOG 200	World Cultures and Globalization	3
Elective Bin 1 Course		3
Policy Course Elective		3
Elective Course		3
Hours		15
Fall Term 3		Hours
GEOG 411	Natural Hazards and Society	3
Elective Bin 1 Course		3
Humanistic and Artistic Ways of Knowing Course		3
GEOG 301	Meteorology	3
GEOG 488	Geography of Energy Systems	3
Hours		15
Spring Term 3		Hours
GEOG 401	Climatology	3
American Diversity Course		3
Elective Bin 1 Course		3
GEOG 430	Climate Change Ecology	3

SOC 466	Climate Change and Society	3
Hours		15
Fall Term 4		Hours
GEOG 435	Climate Change Mitigation	3
GEOG 493	Senior Capstone in Geography	3
Elective Bin 1 Course		3
Elective Bin 2 Course		3
Elective Course		3
Hours		15
Spring Term 4		Hours
SOIL 436	Principles of Sustainability	3
Elective Bin 1 Course		3
Elective Bin 1 Course		3
Elective Bin 2 Course		3
Elective Bin 2 Course		3
Hours		15
Total Hours		120

1. Explain the physical, chemical, and biological processes that govern the Earth's climate system and how people influence the climate system.
2. Understand and explain climate change impacts on both human and natural systems, and be able to identify regions, ecosystems, and groups most vulnerable to climate change
3. Demonstrate knowledge about the strategies for mitigating climate change and options for adapting to its impact.
4. Communicate climate science and solutions in an effective manner to a variety of audiences, including stakeholders and the general public.

Climate Change Graduate Academic Certificate

At least half of the credits completed towards the certificate must be in graduate level coursework, and all required coursework must be completed with a grade of 'B' or better (0-10-b).

Code	Title	Hours
GEOG 513	Global Climate Change	3
Select three courses from the following:		9
BE 553	Northwest Climate and Water Resources Change	
GEOG 430	Climate Change Ecology	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
GEOG 488	Geography of Energy Systems	
GEOG 517	Tree Rings and Environmental Change	
GEOG 535	Climate Change Mitigation	
GEOL 535	Glaciology and the Dynamic Frozen Earth	
GEOL 562	Petroleum Systems and Stratigraphic Concepts	
SOC 466	Climate Change and Society	
Total Hours		12

Courses to total 12 credits for this certificate

1. Demonstrate a depth of knowledge of global climate challenges and problems.
2. Demonstrate the ability to synthesize information related to solutions to current climate change challenges.
3. Demonstrate a depth of knowledge of global climate change adaptation and mitigation solutions.

4. Demonstrate a depth of knowledge of subject matter areas related to global climate change including water and energy systems and understand how they related to climate change.
5. Communicate effectively and professionally.

Climate Change Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
GEOG 313/513	Global Climate Change	3
Select three courses from the following:		9
GEOG 317/517	Tree Rings and Environmental Change	
GEOG 401	Climatology	
GEOG 430	Climate Change Ecology	
GEOG 435/535	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	
GEOG 488	Geography of Energy Systems	
GEOL 435/535	Glaciology and the Dynamic Frozen Earth	
SOC 466	Climate Change and Society	
Seminar courses as approved by the department		
Total Hours		12

Optional recommendation for selection of electives:

In selecting 3 electives from the above list, it is not required that students choose a particular track, and none is designated on the student's transcript. However, to assist students in course selection, the department has developed some recommendations for specific electives that students may want to pursue if they have specific interests or career objectives.

For breadth in all aspects of Climate Change (both Human and Natural Systems) (Note: several of the above courses are focused primarily on some aspect of climate change, and the department recommends that students consider these courses when selecting electives to obtain knowledge across the range of topics of climate change, including climate science, impacts, adaptation, and mitigation.):

- GEOG 401 (Climatology)
- GEOG 430 (Climate Change Ecology)
- GEOG 435 or GEOG 535 (Climate Change Mitigation)
- GEOG 455 (Societal Resilience and Adaptation to Climate Change)

For emphasis on Climate Change and Energy/Society:

- GEOG 488 (Geography of Energy Systems)
- GEOG 435 or GEOG 535 (Climate Change Mitigation)
- GEOG 455 (Societal Resilience and Adaptation to Climate Change)

For emphasis on Climate Change and Biophysical Impacts:

- GEOG 401 (Climatology)
- GEOG 430 (Climate Change Ecology) or GEOG 410 (Biogeography)
- GEOG 317 or GEOG 517 (Tree Rings and Environmental Change)
- GEOG 435 or GEOG 535 (Glaciology and the Dynamic Frozen Earth)

Courses to total 12 credits for this certificate

Earth and Spatial Sciences (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
ENGL 317	Technical Writing II	3
MATH 143	College Algebra	3
STAT 251	Statistical Methods	3
GEOG 385	Foundations of GIS	3
Select one of the following:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 102 & 102L	Historical Geology and Historical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	
Select one of the following:		4
GEOG 165	Human Geography	
GEOG 200	World Cultures and Globalization	
Options		
Select one of the following options:		41-47
Geological Sciences (p. 470)		
Hydrology and Climate (p. 471)		
Geography and Global Sustainability (p. 471)		
Total Hours		61-67

A. Geological Sciences Option

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
PHYS 111	General Physics I	3
or PHYS 211	Engineering Physics I	
PHYS 111L	General Physics I Lab	1
or PHYS 211L	Laboratory Physics I	
GEOL 249	Mineralogy and Optical Mineralogy	4
GEOL 302	Field Geology Methods	3
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOL 326	Igneous and Metamorphic Petrology	4
GEOL 345	Structural Geology	4
GEOL 490	Geology Field Camp	3
or GEOL 489	Virtual Field Camp	
MATH 160	Survey of Calculus	4
or MATH 170	Calculus I	
MATH 175	Calculus II	3-4
or MATH 330	Linear Algebra	

Advisor Approved Electives in Geology	9
Total Hours	46-47

Courses to total 120 credits for this degree

B. Hydrology and Climate Option

Code	Title	Hours
GEOG 313	Global Climate Change	3
GEOG 401	Climatology	3
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	3
GEOL 309	Ground Water Hydrology	3
GEOL 410	Groundwater Field Methods	3
GEOL 490	Geology Field Camp	3
or GEOL 489	Virtual Field Camp	
or GEOG 493	Senior Capstone in Geography	
HYDR 409	Quantitative Hydrogeology	3
HYDR 412	Environmental Hydrogeology	3
MATH 170	Calculus I	4
MATH 175	Calculus II	4
PHYS 211	Engineering Physics I	3
Select two electives from the following:		6-8
GEOL 361	Geology and the Environment	
GEOG 317	Tree Rings and Environmental Change	
GEOG 430	Climate Change Ecology	
GEOG 435	Climate Change Mitigation	
GEOL 431	Chemical Hydrogeology	
GEOL 435	Glaciology and the Dynamic Frozen Earth	
GEOL 474	Stable Isotopes in the Environment	
SOIL 450	Environmental Hydrology	
Total Hours		41-43

Courses to total 120 credits for this degree

C. Geography and Global Sustainability Option

Code	Title	Hours
GEOG 313	Global Climate Change	3
GEOG 420	Land, Resources, and Environment	3
or GEOG 330	Urban Geography	
SOIL 436	Principles of Sustainability	3
GEOG 435	Climate Change Mitigation	3
GEOG 390	Cartographic Design & Geovisualization	3
GEOG 493	Senior Capstone in Geography	3
GEOG 365	Geopolitics and Conflict	3
or GEOG 350	Sustainability of Global Development	
Choose 5 of the following:		15
GEOL 309	Ground Water Hydrology	
GEOG 317	Tree Rings and Environmental Change	
GEOL 335	Geomorphology	
GEOG 350	Sustainability of Global Development	
GEOL 361	Geology and the Environment	
GEOG 410	Biogeography	

HYDR 412	Environmental Hydrogeology	
GEOG 430	Climate Change Ecology	
GEOG 407	Spatial Analysis and Modeling	
GEOG 475	Intermediate GIS	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	
GEOG 479	GIS Programming	
GEOG 483	Remote Sensing IMAGE ANALYSIS/GIS Integration	
GEOL 212	Dinosaurs and Prehistoric Life	
GEOG 260	Introduction to Geopolitics	
GEOG 401	Climatology	
GEOL 474	Stable Isotopes in the Environment	
GEOL 462	Petroleum Systems and Stratigraphic Concepts	
GEOL 431	Chemical Hydrogeology	
Choose 2 supporting courses:		6-8
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory	
PHYS 111 & 111L	General Physics I and General Physics I Lab	
or PHYS 211	Engineering Physics I	
MATH 160	Survey of Calculus	
or MATH 170	Calculus I	
MATH 175	Calculus II	
STAT 431	Statistical Analysis	
ECON 446	International Economics	
or ECON 447	International Development Economics	
ECON 201	Principles of Macroeconomics	
or ECON 447	International Development Economics	
ECON 202	Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
SOIL 450	Environmental Hydrology	
SOIL 444	Water Quality in the Pacific Northwest	
SOIL 448	Drinking Water and Human Health	
BE 453	Northwest Climate and Water Resources Change	
ENVS 415	Environmental Lifecycle Assessment	
Total Hours		42-44

Courses to total 120 credits for this degree

Geological Sciences Option

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
(GEOL 101 AND GEOL 101L) OR (GEOL 111 AND GEOL 111L) OR (GEOL 102 AND GEOL 102L) OR (GEOG 100 AND GEOG 100L)	4
Social and Behavioral Ways of Knowing Course	3
Oral Communication Course	3
Hours	16
Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
GEOL 249 Mineralogy and Optical Mineralogy	4
MATH 160 OR MATH 170	4
Hours	15

Fall Term 2		
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOG 165 or GEOG 200	Human Geography or World Cultures and Globalization	3
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Geology, Major Elective Course		3
Hours		14
Spring Term 2		
GEOL 345	Structural Geology	4
GEOG 385	Foundations of GIS	3
MATH 175 or MATH 330	Calculus II or Linear Algebra	4
Humanistic and Artistic Ways of Knowing Course		3
Hours		14
Summer Term 2		
GEOL 302	Field Geology Methods	3
Hours		3
Fall Term 3		
GEOL 326	Igneous and Metamorphic Petrology	4
ENGL 317	Technical Writing II	3
American Diversity Course		3
Elective Course		3
Hours		13
Spring Term 3		
STAT 251	Statistical Methods	3
International Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Summer Term 3		
GEOL 490	Geology Field Camp	3
Hours		3
Fall Term 4		
Geology, Major Elective Course		3
Geology, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		
Geology, Major Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Hours		12
Total Hours		120

Global Sustainability and Geography Option

	Hours
Fall Term 1	
ENGL 101	Writing and Rhetoric I
MATH 143	College Algebra
(GEOL 101 AND GEOL 101L) OR (GEOL 111 AND GEOL 111L) OR (GEOL 102 AND GEOL 102L) OR (GEOG 100 OR GEOG 100L)	
Social and Behavioral Ways of Knowing Course	
Oral Communication Course	
Hours	
16	
Spring Term 1	
ENGL 102	Writing and Rhetoric II
CHEM 111	General Chemistry I
CHEM 111L	General Chemistry I Laboratory
STAT 251	Statistical Methods

GEOG 165 or GEOG 200	Human Geography or World Cultures and Globalization	3
Geography, Major Elective Course		3
Hours		16
Fall Term 2		
MATH 170	Calculus I (Suggested Supporting Course)	4
GEOG 385	Foundations of GIS	3
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Humanistic and Artistic Ways of Knowing Course		3
Hours		14
Spring Term 2		
GEOG 365 or GEOG 350	Geopolitics and Conflict or Sustainability of Global Development	3
Geography, Major Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Fall Term 3		
ENGL 317	Technical Writing II	3
GEOG 313	Global Climate Change	3
GEOG 435	Climate Change Mitigation	3
Geography, Major Elective Course		3
Elective Course		3
Hours		15
Spring Term 3		
GEOG 390	Cartographic Design & Geovisualization	3
SOIL 436	Principles of Sustainability	3
Geography, Major Elective Course		3
Geography, Major Elective Course		3
International Course		3
Hours		15
Fall Term 4		
GEOG 420 or GEOG 330	Land, Resources, and Environment or Urban Geography	3
American Diversity Course		3
Supporting Class, Major Elective Course		3
Geography, Major Elective Course		3
Elective Course		2
Hours		14
Spring Term 4		
GEOG 493	Senior Capstone in Geography	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

Hydrology and Climate Option

	Hours
Fall Term 1	
ENGL 101	Writing and Rhetoric I
MATH 143	College Algebra
(GEOL 101 AND GEOL 101L) OR (GEOL 111 AND GEOL 111L) OR (GEOL 102 AND GEOL 102L) OR (GEOG 100 AND GEOG 100L)	
Social and Behavioral Ways of Knowing Course	
Oral Communication Course	
Hours	
16	
Spring Term 1	
ENGL 102	Writing and Rhetoric II
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory

GEOG 165 or GEOG 200	Human Geography or World Cultures and Globalization	3
MATH 170	Calculus I	4
Hours		14
Fall Term 2		
GEOG 309	Ground Water Hydrology	3
GEOG 313	Global Climate Change	3
MATH 175	Calculus II	4
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	4
Hours		14
Spring Term 2		
STAT 251	Statistical Methods	3
GEOG 385	Foundations of GIS	3
GEOL/GEOG Course, Major Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Summer Term 2		
GEOL 302	Field Geology Methods	3
Hours		3
Fall Term 3		
ENGL 317	Technical Writing II	3
GEOL 410	Groundwater Field Methods	3
HYDR 409	Quantitative Hydrogeology	3
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	3
Elective Course		3
Hours		15
Spring Term 3		
International Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Elective Course		4
Hours		13
Summer Term 3		
GEOL 490	Geology Field Camp	3
Hours		3
Fall Term 4		
GEOL/GEOG, Major Elective Course		3
American Diversity Course		3
Elective Course		3
Elective Course		3
Elective Course		1
Hours		13
Spring Term 4		
GEOG 493	Senior Capstone in Geography	3
GEOG 401	Climatology	3
HYDR 412	Environmental Hydrogeology	3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		2
Hours		14
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

New Learning Outcomes:

"Core" learning outcomes for ESS degree common to all three options

1. Students will develop an understanding of geologic and human systems through the study of Earth and human processes that interact across a wide range of spatial and temporal scales.
2. Students will develop skills applicable to the collection, integration, analysis, and illustration of data for solving spatial and temporal problems
3. Students will develop skills for communicating fundamental concepts in their field and results from their own work, in both written and oral settings.

Option-specific learning outcomes:

Geological Sciences option:

1. Preparation for the National Association of State Boards of Geology (ASBOG) Fundamentals of Geology (FG) exam, the precursor to licensure as a Professional Geologist.
2. Ability to integrate and communicate understanding of the geologic sciences (e.g., mineralogy, petrology, stratigraphy, etc.) to develop testable hypotheses of the origin and evolution of geological terrains.

Hydrology and Climate option:

1. Comprehension of the hydrologic cycle and the ability to measure and interpret basic physical and biochemical aspects of water associated with hydrologic processes.
2. Ability to explain the physical nature of global climate change and the role of society in influencing and mitigating effects of climate change.

Global Sustainability and Geography option:

1. Understanding of geographic and spatial perspectives in the interaction between and sustainability of human and natural systems
2. The ability to use geospatial data to map and analyze spatial patterns and relationships with a wide variety of data types, including both natural and human systems.

Environmental Hydrogeology Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
GEOL 309	Ground Water Hydrology	3
GEOL 410	Groundwater Field Methods	3
HYDR 409	Quantitative Hydrogeology	3
HYDR 412	Environmental Hydrogeology	3
Choose one of the following:		3
GEOL 428	Geostatistics	
GEOG 424	Hydrologic Applications of GIS and Remote Sensing	

GEOL 431	Chemical Hydrogeology	
Total Hours		15

Courses to total 15 credits for this certificate

1. Comprehension of the hydrologic cycle and the ability to measure and interpret basic physical and biochemical aspects of water associated with hydrologic processes.

2. Ability to explain the physical nature of global climate change and the role of society in influencing and mitigating effects of climate change.

Geographic Information Science (M.S.)

Code	Title	Hours
Core Curriculum: 18 cr. (non-thesis-16 cr. plus 2 cr. 599) - 22 cr. (thesis) (16 cr. plus 6 cr. 500)		
GEOG 475	Intermediate GIS	3
GEOG 583	Remote Sensing IMAGE ANALYSIS/GIS Integration	3
GEOG 507	Spatial Analysis and Modeling	3
GEOG 525	Graduate GIS Fundamentals	3
GEOG 593	Geovisualization	3
GEOG 596	Geography Department Seminar	1
<i>Thesis or Non-Thesis Track:</i>		2-6
Thesis Track (6 credits):		
GEOG 500	Master's Research and Thesis (Thesis students will take 6 thesis credits)	
	or GEOL 500 Master's Research and Thesis	
Non-Thesis Track (2 credits)		
GEOG 599	Research (Research students will take 2 research credits)	
	or GEOL 599 Research	
Application Areas		
Select one of the Following Application Areas:		8-12
Remote Sensing (p. 474)		
GIS Programming (p. 474)		
Natural Hazards and Emergency Planning (p. 474)		
Geospatial Aspects of Sustainable Planning (p. 474)		
Geotechnician (p. 475)		
Geospatial Habitat Assessment (p. 475)		
Geospatial Intelligence (p. 475)		
Total Hours		26-34

Courses to total 30 credits for this degree**A. Remote Sensing**

Code	Title	Hours
Select 8 credits for thesis students, 12 credits for non-thesis from the following:		
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	3
NRS 578	LIDAR and Optical Remote Sensing Analysis	3
FOR/NRS 472	Remote Sensing of the Environment	4
FOR 535	Remote Sensing of Fire	3
REM 476	Unmanned Aerial Systems (UAS) Operations	1

REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)	3
ECE 516	Image Sensors and Systems	3
NRS 552	Current Lit in Remote Sensing	1

B. GIS Programming

Code	Title	Hours
Select 8 credits for thesis, 12 credits for non-thesis from the following:		
GEOG 479	GIS Programming	3
STAT 419	Introduction to SAS/R Programming	3
STAT 426	SAS Programming	3
STAT 427	R Programming	3
ENVS 511	Data Wizardry in Environmental Sciences	3
CS 479	Data Science	3

C. Natural Hazards and Emergency Planning

Code	Title	Hours
Select 8 credits for thesis, 12 credits for non-thesis from the following:		
GEOG 411	Natural Hazards and Society	3
GEOG 414	Socioeconomic Applications of GIS	3
GEOL 567	Volcanology	3
FIRE 554	Air Quality, Pollution, and Smoke	3
NRS 576	Environmental Project Management and Decision Making	2
NRS 588	NEPA in Policy and Practice	3
CE 535	Fluvial Geomorphology and River Mechanics	3
GEOE 535	Seepage and Slope Stability	3
TM 517	Critical Infrastructure Security and Resilience Fundamentals	3
TM 525	Emergency Management and Planning	3
INDT 470	Homeland Security	3

D. Geospatial Aspects of Sustainable Planning

Code	Title	Hours
Select 8 credits for thesis, 12 credits for non-thesis from the following:		
GEOG 535	Climate Change Mitigation	3
GEOG 414	Socioeconomic Applications of GIS	3
SOIL 536	Principles of Sustainability	3
SOIL 544	Water Quality in the Pacific Northwest	3
SOIL 548	Drinking Water and Human Health	3
ENVS 520	Introduction to Bioregional Planning	3
ENVS 523	Planning Sustainable Places	3
ENVS 530	Planning Theory and Process	3
ENVS 511	Data Wizardry in Environmental Sciences	3
TM 517	Critical Infrastructure Security and Resilience Fundamentals	3
TM 525	Emergency Management and Planning	3

E. Geotechnician

Code	Title	Hours
Select 8 credits for thesis, 12 credits for non-thesis from the following:		
GEOL 471	Ore Deposits and Exploration	3
GEOL 531	Chemical Hydrogeology	3
STAT 419	Introduction to SAS/R Programming	3
STAT 431	Statistical Analysis	3
NRS 578	LIDAR and Optical Remote Sensing Analysis	3
ENVS 579	Introduction to Environmental Regulations	3
SOIL 544	Water Quality in the Pacific Northwest	3
SOIL 548	Drinking Water and Human Health	3

F. Geospatial Habitat Assessment

Code	Title	Hours
Select 8 credits for thesis, 12 credits for non-thesis from the following:		
REM 429	Landscape Ecology	3
REM 507	Landscape and Habitat Dynamics	3
REM 520	Advanced Vegetation Measurement and Monitoring	3
NRS 578	LIDAR and Optical Remote Sensing Analysis	3
NRS 588	NEPA in Policy and Practice	3
NRS 552	Current Lit in Remote Sensing	1
FOR 514	Forest Biometrics	3
WLF 511	Wildland Habitat Ecology and Assessment	2

G. Geospatial Intelligence

Code	Title	Hours
Select 8 credits for thesis, 12 credits for non-thesis from the following:		
GEOG 414	Socioeconomic Applications of GIS	3
GEOG 550	Sustainability of Global Development	3-4
GEOG 565	Geopolitics and Conflict	3
ECON 446	International Economics	3
ECON 447	International Development Economics	3
NRS 578	LIDAR and Optical Remote Sensing Analysis	3
INDT 470	Homeland Security	3
CS 575	Machine Learning	3
CS 577	Python for Machine Learning	3
CS 579	Data Science	3
POLS 410	Game Theory	3

1. Demonstrate a depth of knowledge of spatial analysis and mapping techniques.
2. Demonstrate the ability to gather and analyze appropriate data and write results in context of existing literature and significance of the analysis.
3. Demonstrate advanced skills to conduct either disciplinary or interdisciplinary analyses using geographical information systems methods and datasets for Earth system science problems.
4. Apply mastery of key principals and core concepts in geographical information systems with a depth of knowledge in one of seven application areas cover critical land resource management and industrial workforce needs.

5. Demonstrate the ability to synthesize ideas and information to identify, analyze and problem-solve Earth system science and land resource management issues; demonstrate an application of this synthesis.
6. Collaborate with a faculty advisor and graduate committee to conduct independent research.
7. Communicate effectively, professionally, and within group settings.

Geographic Information Systems Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10- (p. 94)b).

Code	Title	Hours
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	3
or GEOG 583	Remote Sensing IMAGE ANALYSIS/GIS Integration	
GEOG 525	Graduate GIS Fundamentals	3
GEOG 593	Geovisualization	3
Select 6 credits of electives from the following:		6
GEOG 402	GIS Skills Development	
GEOG 475	Intermediate GIS	
GEOG 507	Spatial Analysis and Modeling	
GEOG 414	Socioeconomic Applications of GIS	
GEOG 479	GIS Programming	
GEOG 487	Topics in Geospatial Analysis	
FIRE 407	GIS Application in Fire Ecology and Management	
Other courses as approved by the department		
Total Hours		15

Courses to total 15 credits for this certificate

1. Students will develop an understanding of spatial systems through the study of Earth and human processes that interact across a wide range of spatial and temporal scales.
2. Students will develop skills applicable to the collection, integration, analysis, and illustration of data for solving spatial and temporal problems
3. Students will develop skills for communicating fundamental concepts in their field and results from their own work, in both written and oral settings.

Geographic Information Systems Undergraduate Academic Certificate

All required coursework must be completed with a grade of 'C' or better (O-10-a (p. 94)).

Code	Title	Hours
GEOG 385	Foundations of GIS	3
GEOG 475	Intermediate GIS	3
Select 9 credits of electives from the following: (See note below about limits to the total number of credits allowed from outside the Geography department.)		9
GEOG 390	Cartographic Design & Geovisualization	
GEOG 402	GIS Skills Development	
GEOG 407/507	Spatial Analysis and Modeling	

GEOG 414	Socioeconomic Applications of GIS
GEOG 424/524	Hydrologic Applications of GIS and Remote Sensing
GEOG 479	GIS Programming
GEOG 483/583	Remote Sensing IMAGE ANALYSIS/GIS Integration
GEOG 487	Topics in Geospatial Analysis
FOR 375	Fundamentals of Geomatics
LARC 395	GIS Applications for Landscape Planning
FIRE 407	GIS Application in Fire Ecology and Management
Other courses as approved by the department	

Note: Nine of the 15 credits must be taken within the Geography department at the University of Idaho. Only 6 credits may be taken outside of the department, including courses taken in other departments at U of I and transfer courses from other institutions used as substitutions.

Courses to total 15 credits for this certificate

Geographical Information Systems (B.S.)

This program is offered through the College of Science (p. 442). Students must earn a grade of 'C' or better in all Geography courses. Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
MATH 143	College Algebra	3
CS 212	Practical Python	3
STAT 251	Statistical Methods	3
ENGL 313	Business Writing	3
or ENGL 317	Technical Writing II	3
GEOG 100 & 100L	Introduction to Planet Earth and Introduction to Planet Earth Lab	4
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
GEOG 385	Foundations of GIS	3
GEOG 390	Cartographic Design & Geovisualization	3
GEOG 475	Intermediate GIS	3
GEOG 479	GIS Programming	3
GEOG 493	Senior Capstone in Geography	3
Select one of the following:		3-4
MATH 160	Survey of Calculus	
MATH 170	Calculus I	
MATH 175	Calculus II	
Select 3 credits from the following in human geography:		3
GEOG 260	Introduction to Geopolitics	
GEOG 330	Urban Geography	
GEOG 345	Global Economic Geography	
GEOG 350	Sustainability of Global Development	
GEOG 360	Population Dynamics and Distribution	
GEOG 365	Geopolitics and Conflict	
Select 3 credits from the following in physical geography:		3
GEOG 301	Meteorology	

GEOG 317	Tree Rings and Environmental Change
GEOG 401	Climatology
GEOG 410	Biogeography
GEOG 430	Climate Change Ecology
Select one course from the following in human-environment interactions:	3
GEOG 420	Land, Resources, and Environment
GEOG 435	Climate Change Mitigation
GEOG 455	Societal Resilience and Adaptation to Climate Change
GEOG 488	Geography of Energy Systems
Select 6 additional credits in Geography courses.	6
Choose 3 GIS courses out of the following List. Note GEOG 424 and GEOG 483 can only count for one bin.	9
GEOG 407	Spatial Analysis and Modeling
GEOG 414	Socioeconomic Applications of GIS
GEOG 424	Hydrologic Applications of GIS and Remote Sensing
GEOG 483	Remote Sensing IMAGE ANALYSIS/GIS Integration
FIRE 407	GIS Application in Fire Ecology and Management
Choose 2 Remote Sensing courses from the following list. Note GEOG 424 and GEOG 483 can only count for one bin.	4
FOR 472	Remote Sensing of the Environment
or GEOG 424	Hydrologic Applications of GIS and Remote Sensing
or GEOG 483	Remote Sensing IMAGE ANALYSIS/GIS Integration
REM 475	Remote Sensing Application with Unmanned Aerial Systems (UAS)
REM 476	Unmanned Aerial Systems (UAS) Operations
Choose 1 Data Analytics course from the following list.	3
STAT 431	Statistical Analysis
MIS 350	Managing Information
MIS 440	Data Visualization for Managerial Decision Making
MIS 453	Database Design
Free electives	19
Total Hours	90-91

Courses to total 120 credits for this degree

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
GEOG 100	Introduction to Planet Earth	3
GEOG 100L	Introduction to Planet Earth Lab	1
MATH 143 OR MATH 160 OR MATH 170 OR MATH 175		3
Oral Communication Course		3
Social and Behavioral Ways of Knowing Course		3
Hours	16	
Spring Term 1	Hours	
ENGL 102	Writing and Rhetoric II	3
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
MATH 160	Survey of Calculus	4
or MATH 170	or Calculus I	
or MATH 175	or Calculus II	
Humanistic and Artistic Ways of Knowing Course		3
Hours	16	

Fall Term 2		
ENGL 313 or ENGL 317	Business Writing or Technical Writing II	3
STAT 251	Statistical Methods	3
Geography Major, Elective Course		3
Scientific Ways of Knowing Course		4
Hours		13
Spring Term 2		
CS 212	Practical Python	3
GEOG 385	Foundations of GIS	3
GEOG 260 or GEOG 330 or GEOG 345 or GEOG 350 or GEOG 360 or GEOG 365	Introduction to Geopolitics or Urban Geography or Global Economic Geography or Sustainability of Global Development or Population Dynamics and Distribution or Geopolitics and Conflict	3
GIS Elective, Major Elective Course		3
Remote Sensing, Major Elective Course		3
Hours		15
Fall Term 3		
GEOG 390	Cartographic Design & Geovisualization	3
GEOG 301 or GEOG 317 or GEOG 401 or GEOG 410 or GEOG 430	Meteorology or Tree Rings and Environmental Change or Climatology or Biogeography or Climate Change Ecology	3
GIS, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3
Elective Course		3
Hours		15
Spring Term 3		
GEOG 420 or GEOG 435 or GEOG 455 or GEOG 488	Land, Resources, and Environment or Climate Change Mitigation or Societal Resilience and Adaptation to Climate Change or Geography of Energy Systems	3
GEOG 475	Intermediate GIS	3
American Diversity Course		3
Elective Course		3
Elective Course		3
Hours		15
Fall Term 4		
GEOG 479	GIS Programming	3
GEOG 493	Senior Capstone in Geography	3
Geography, Major Elective Course		3
GIS, Major Elective Course		3
Elective Course		3
Hours		15
Spring Term 4		
Remote Sensing, Major Elective Course		3
Data Analytics, Major Elective Course		3
Elective Course		3
Elective Course		3
Elective Course		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the

Registrar's Office regarding your official degree/certificate completion status.

1. The ability to write clearly and to verbally explain problems and issues in geographic science and related human and environmental topics in an effective manner and with supportive visual and statistical materials.
2. The ability to understand empirical research reports and most methodology in the science of geography and related fields.
3. The ability to use GIS to map and analyze spatial patterns and relationships in a wide variety of data types.
4. The ability to use basic statistics and data analysis for constructing models of cause and effect.
5. The ability to design research methods to both problem-solve and to provide sound analysis for addressing practical and policy related questions.

Geography (M.S.)

Master of Science. Major in Geography.

Thesis Option

Each student's training and research plan is developed by the student and the major professor with the advisory committee's approval. Admission is based on the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to serve as the student's mentor. A written thesis is required, but the thesis may be comprised of a manuscript in a form acceptable for publication in a refereed journal, while otherwise fulfilling the requirements of the Graduate College.

Master of Science. Major in Geography.

Non-thesis Professional Option

This program is designed for individuals who wish to place less emphasis upon research in their plan of study, but want to gain experience in applying their knowledge to a substantial project of an applied nature. Projects may be aligned with internships or other work experiences. The student's advisory committee will consist of two faculty members from the Department of Geography. Projects must be documented and presented according to guidelines in the department handbook and approved by the student's committee. This option can be completed via face-to-face or by online delivery.

1. Depth of knowledge of research methods and ability to structure scientific problems with appropriate data and analytical methods.
2. Breadth of knowledge of the fields of both human and physical geography.
3. Depth of knowledge in specialty field within physical or human geography or geotechniques.
4. Depth of knowledge of spatial analysis and mapping techniques.
5. History of geography and techniques of spatial analysis.
6. The ability to structure scientific problems with appropriate data and analytical methods.
7. The ability to gather and analyze appropriate data and write results in context of existing literature and significance of the analysis.
8. The ability to communicate research in oral presentations and written peer-reviewed materials.

Geography (Ph.D.)

Doctor of Philosophy. Major in Geography.

All general Ph.D. requirements apply. An M.S. degree is required. Admission is by faculty approval based on evaluation of the applicant's potential to carry out original research. Each student's training and research plan is developed by the student and the major professor with the advisory committee's approval. The advisory committee typically consists of three faculty members in the department and one faculty member from another department. Students are not allowed to register for dissertation credits (GEOG 600) until they have advanced to candidacy via successful completion of their preliminary examination. The dissertation must be of an original research nature and be in a topic spanned by the research interests and expertise of the major professor and committee members.

1. Breadth of knowledge of the fields of both human and physical geography, history of geography, and techniques of spatial analysis.
2. Depth of knowledge in specialty field within physical or human geography or geotechniques.
3. Ability to structure scientific problems with appropriate data and analytical methods.
4. Ability to gather and analyze appropriate data and write results in context of existing literature and significance of the analysis.
5. Ability to communicate research in oral presentations and written peer-reviewed materials.

Geography Minor

Code	Title	Hours
GEOG 100	Introduction to Planet Earth	3
GEOG 100L	Introduction to Planet Earth Lab	1
GEOG 165	Human Geography	3
GEOG 200	World Cultures and Globalization	3
GEOG 385	Foundations of GIS	3
Select two electives from the following categories:		6
<i>Human Geography</i>		
GEOG 260	Introduction to Geopolitics	
GEOG 330	Urban Geography	
GEOG 345	Global Economic Geography	
GEOG 350	Sustainability of Global Development	
GEOG 360	Population Dynamics and Distribution	
GEOG 365	Geopolitics and Conflict	
<i>Physical Geography</i>		
GEOG 301	Meteorology	
GEOG 313	Global Climate Change	
GEOG 317	Tree Rings and Environmental Change	
GEOG 401	Climatology	
GEOG 410	Biogeography	
GEOG 430	Climate Change Ecology	
GEOG 335	Geomorphology	
<i>Human-Environment Geography</i>		
GEOG 420	Land, Resources, and Environment	
GEOG 435	Climate Change Mitigation	
GEOG 455	Societal Resilience and Adaptation to Climate Change	

GEOG 488	Geography of Energy Systems
<i>Geospatial Methods</i>	
GEOG 390	Cartographic Design & Geovisualization
GEOG 407	Spatial Analysis and Modeling
GEOG 414	Socioeconomic Applications of GIS
GEOG 424	Hydrologic Applications of GIS and Remote Sensing
GEOG 475	Intermediate GIS
GEOG 479	GIS Programming
GEOG 483	Remote Sensing IMAGE ANALYSIS/GIS Integration
<i>Other Geography electives as approved by the department</i>	

Total Hours **19**

Courses to total 19 credits for this minor

Geology (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 318	Science Writing	3
GEOG 385	Foundations of GIS	3
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
GEOL 249	Mineralogy and Optical Mineralogy	4
GEOL 302	Field Geology Methods	3
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOL 326	Igneous and Metamorphic Petrology	4
GEOL 345	Structural Geology	4
GEOL 422	Principles of Geophysics	4
GEOL 490	Geology Field Camp	3
MATH 143	College Algebra	3
MATH 170	Calculus I	4
Select one of the following:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
Select one of the following:		4
PHYS 111 & 111L	General Physics I and General Physics I Lab	
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I	
Options		
Select one of the following options:		23-34
Energy Resiliency (p. 479)		
Environmental Hydrogeology (p. 479)		
Sustainable Mining and Earth Resource Management (p. 479)		
Geological Education (p. 479)		

Total Hours **78-89**

A. Energy Resiliency Option

Code	Title	Hours
GEOL 212	Dinosaurs and Prehistoric Life	4
GEOL 462	Petroleum Systems and Stratigraphic Concepts	3
GEOL 471	Ore Deposits and Exploration	3
GEOG 313	Global Climate Change	3
GEOG 488	Geography of Energy Systems	3
GEOG 435	Climate Change Mitigation	3
MSE 201	Elements of Materials Science	3
MSE 438	Fundamentals of Nuclear Materials	3
ENVS 484	History of Energy	3
ENVS 485	Energy Efficiency and Conservation	3
ENVS 415	Environmental Lifecycle Assessment	3
GEOL 318	Economic Geology	3

Courses to total 120 credits for this degree

B. Environmental Hydrogeology Option

Code	Title	Hours
GEOL 309	Ground Water Hydrology	3
GEOL 361	Geology and the Environment	3
HYDR 409	Quantitative Hydrogeology	3
GEOL 410	Groundwater Field Methods	3
HYDR 412	Environmental Hydrogeology	3
GEOL 428	Geostatistics	3
GEOL 431	Chemical Hydrogeology	3
GEOL 435 or GEOL 474	Glaciology and the Dynamic Frozen Earth Stable Isotopes in the Environment	3
Select two courses from the following:		6-7
MATH 175	Calculus II	
STAT 251	Statistical Methods	
STAT 301	Probability and Statistics	
Select one of the following:		4
PHYS 112 & 112L	General Physics II and General Physics II Lab	
PHYS 212 & 212L	Engineering Physics II and Laboratory Physics II	
Select one elective from the following:		6-8
GEOG 301	Meteorology	
GEOG 401	Climatology	
MATH 275	Calculus III	
MATH 310	Ordinary Differential Equations	
MATH 330	Linear Algebra	
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory	
CHEM 275 & CHEM 276	Carbon Compounds and Carbon Compounds Lab	
CHEM 277 & CHEM 278	Organic Chemistry I and Organic Chemistry I: Lab	

Total Hours 40-43

Courses to total 120 credits for this degree

C. Sustainable Mining and Earth Resource Management Option

Code	Title	Hours
CE 105	Civil Engineering Drafting	3
CE 211	Engineering Surveying	3
GEOE 465	Excavation and Materials Handling	3
GEOE 499 or GEOL 498 or GEOL 400	Directed Study Senior Thesis Seminar	2
GEOG 350	Sustainability of Global Development	3-4
GEOL 361	Geology and the Environment	3
GEOL 447 or GEOL 474	Geochronology and Thermochronology Stable Isotopes in the Environment	3
GEOL 462	Petroleum Systems and Stratigraphic Concepts	3
GEOL 471	Ore Deposits and Exploration	3
GEOL 428	Geostatistics	3
HYDR 412	Environmental Hydrogeology	3
FOR 207 or REM 280	Properties of Artificial Growth Media Introduction to Wildland Restoration	1
NRS 488 or ENVS 479	NEPA in Policy and Practice Introduction to Environmental Regulations	3
GEOL 318	Economic Geology	3
GEOL 310	Geological Core Logging	1

Total Hours 40-41

D. Geological Education Option

Code	Title	Hours
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
GEOG 100	Introduction to Planet Earth	3
GEOG 100L	Introduction to Planet Earth Lab	1
GEOG 401	Climatology	3
GEOL 212	Dinosaurs and Prehistoric Life	4
GEOL 335	Geomorphology	3
PHYS 103	General Astronomy	3
PHYS 104	Astronomy Lab	1
PLSC 205	General Botany	4
Select one of the following:		3-4
MATH 175	Calculus II	
MATH 330	Linear Algebra	
STAT 251	Statistical Methods	

Total Hours 29-30

Courses to total 120 credits for this degree

Energy Resiliency Option

Fall Term 1	Hours	
ENGL 101	Writing and Rhetoric I	3
GEOL 165 or GEOG 200	Human Geography (Recommended - Both courses fulfill Social & Behavioral Ways of Knowing and International requirements) or World Cultures and Globalization	3

MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
(GEOL 101 AND GEOL 101L) OR (GEOL 111 AND GEOL 111L)		4
Hours		14
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
MATH 170	Calculus I	4
Hours		15
Fall Term 2		
GEOL 212	Dinosaurs and Prehistoric Life	4
MSE 201	Elements of Materials Science	3
GEOL 318	Economic Geology	3
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Hours		14
Spring Term 2		
GEOL 249	Mineralogy and Optical Mineralogy	4
GEOL 345	Structural Geology	4
GEOG 385	Foundations of GIS	3
Social and Behavioral Ways of Knowing Course		3
Hours		14
Summer Term 2		
GEOL 302	Field Geology Methods	3
Hours		3
Fall Term 3		
GEOG 313	Global Climate Change	3
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOL 326	Igneous and Metamorphic Petrology	4
GEOL 462	Petroleum Systems and Stratigraphic Concepts	3
Hours		14
Spring Term 3		
ENGL 318	Science Writing	3
MSE 438	Fundamentals of Nuclear Materials	3
American Diversity Course		3
Oral Communication Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		15
Summer Term 3		
GEOL 490	Geology Field Camp	3
or GEOL 489 or Virtual Field Camp		
Hours		3
Fall Term 4		
GEOL 471	Ore Deposits and Exploration	3
GEOG 435	Climate Change Mitigation	3
ENVS 485	Energy Efficiency and Conservation	3
GEOG 350	Sustainability of Global Development (Recommended)	3
Humanistic and Artistic Ways of Knowing		3
Hours		15
Spring Term 4		
GEOL 422	Principles of Geophysics	4
ENVS 484	History of Energy	3
GEOG 488	Geography of Energy Systems	3
ENVS 415	Environmental Lifecycle Assessment	3
Hours		13
Total Hours		120

Environmental Hydrogeology Option

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
GEOL 101	Physical Geology	3
or GEOL 111 or Physical Geology for Science Majors		
GEOL 101L	Physical Geology Lab	1
or GEOL 111L or Physical Geology for Science Majors Lab		
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3
Hours		17
Spring Term 1		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
MATH 170	Calculus I	4
Hours		15
Fall Term 2		
GEOL 309	Ground Water Hydrology	3
MATH 175	Calculus II	4
or STAT 251 or Statistical Methods		
or STAT 301 or Probability and Statistics		
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)		4
Social and Behavioral Ways of Knowing Course		3
Hours		14
Spring Term 2		
GEOL 249	Mineralogy and Optical Mineralogy	4
GEOL 345	Structural Geology	4
STAT 251	Statistical Methods	3
or MATH 175 or Calculus II		
or STAT 301 or Probability and Statistics		
(PHYS 112 AND PHYS 112L) OR (PHYS 211 AND PHYS 211L)		4
Hours		15
Summer Term 2		
GEOL 302	Field Geology Methods	3
Hours		3
Fall Term 3		
GEOL 324	Principles of Stratigraphy and Sedimentation	4
GEOL 326	Igneous and Metamorphic Petrology	4
GEOL 361	Geology and the Environment	3
ENGL 318	Science Writing	3
Hours		14
Spring Term 3		
GEOL 474	Stable Isotopes in the Environment	3
or GEOL 435 or Glaciology and the Dynamic Frozen Earth		
HYDR 412	Environmental Hydrogeology	3
GEOG/MATH/CHEM, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
American Diversity Course		3
Hours		15
Summer Term 3		
GEOL 490	Geology Field Camp	3
or GEOL 489 or Virtual Field Camp		
Hours		3
Fall Term 4		
GEOL 410	Groundwater Field Methods	3
HYDR 409	Quantitative Hydrogeology	3
GEOG 385	Foundations of GIS	3
Humanistic and Artistic Ways of Knowing		3

GEOG/MATH/CHEM, Major Elective Course	3
Hours	15
Spring Term 4	
GEOL 422 Principles of Geophysics	4
GEOL 428 Geostatistics	3
GEOL 431 Chemical Hydrogeology	3
International Course (GEOG 350 recommended)	3
Hours	13
Total Hours	124

Sustainable Mining and Earth Resource Management Option

Freshman

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
MATH 144 Analytic Trigonometry	1
GEOL 101 Physical Geology or GEOL 111 or Physical Geology for Science Majors	3
GEOL 101L Physical Geology Lab or GEOL 111L or Physical Geology for Science Majors Lab	1
GEOG 165 Human Geography (Recommended - Both courses fulfill Social & Behavioral Ways of Knowing and International requirements) or GEOG 200 or World Cultures and Globalization	3
Oral Communication Course	3
Hours	17

Spring Term 1

ENGL 102 Writing and Rhetoric II	3
CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
GEOL 102 Historical Geology	3
GEOL 102L Historical Geology Lab	1
MATH 170 Calculus I	4
Hours	15

Sophomore

Fall Term 2	Hours
GEOL 318 Economic Geology	3
GEOL 324 Principles of Stratigraphy and Sedimentation	4
PHYS 111 General Physics I or PHYS 211 or Engineering Physics I	3
PHYS 111L General Physics I Lab or PHYS 211L or Laboratory Physics I	1
Humanistic and Artistic Ways of Knowing Course	3
Hours	14

Spring Term 2

GEOL 249 Mineralogy and Optical Mineralogy	4
GEOL 345 Structural Geology	4
GEOG 385 Foundations of GIS	3
CE 105 Civil Engineering Drafting	3
Hours	14

Summer Term 2

GEOL 302 Field Geology Methods	3
Hours	3

Junior

Fall Term 3	Hours
CE 211 Engineering Surveying	3
GEOL 326 Igneous and Metamorphic Petrology	4
GEOL 361 Geology and the Environment	3
GEOL 462 Petroleum Systems and Stratigraphic Concepts	3
Hours	13

Spring Term 3

ENGL 318 Science Writing	3
FOR 207 Properties of Artificial Growth Media or REM 280 or Introduction to Wildland Restoration	1
GEOL 498 Senior Thesis (or internship) or GEOL 400 or Seminar or GEOE 499 or Directed Study	2
American Diversity Course	3
Social and Behavioral Ways of Knowing Course	3
Hours	12

Summer Term 3

GEOL 490 Geology Field Camp or GEOL 489 or Virtual Field Camp	3
Hours	3

Senior

Fall Term 4	Hours
GEOE 465 Excavation and Materials Handling	3
GEOL 310 Geological Core Logging	1
GEOL 471 Ore Deposits and Exploration	3
ENVS 479 Introduction to Environmental Regulations or NRS 488 or NEPA in Policy and Practice	3
HYDR 412 Environmental Hydrogeology	3
Hours	13

Spring Term 4

GEOG 350 Sustainability of Global Development (International Course)	3
GEOL 428 Geostatistics	3
GEOL 422 Principles of Geophysics	4
GEOL 474 Stable Isotopes in the Environment	3
Humanistic and Artistic Ways of Knowing	3
Hours	16
Total Hours	120

Geological Education Option

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
MATH 144 Analytic Trigonometry	1
(GEOL 101 AND GEOL 101L) OR (GEOL 111 AND GEOL 111L)	4
Oral Communication Course	3
Hours	14

Spring Term 1

CHEM 111 General Chemistry I	3
CHEM 111L General Chemistry I Laboratory	1
ENGL 102 Writing and Rhetoric II	3
GEOL 102 Historical Geology	3
GEOL 102L Historical Geology Lab	1
MATH 170 Calculus I	4
Hours	15

Fall Term 2

BIOL 115 Cells and the Evolution of Life	3
BIOL 115L Cells and the Evolution of Life Laboratory	1
GEOL 249 Mineralogy and Optical Mineralogy	4
(PHYS 111 AND PHYS 111L) OR (PHYS 211 AND PHYS 211L)	4
Humanistic and Artistic Ways of Knowing Course	3
Hours	15

Spring Term 2

GEOG 100 Introduction to Planet Earth	3
GEOG 100L Introduction to Planet Earth Lab	1
GEOL 212 Dinosaurs and Prehistoric Life	4
GEOL 326 Igneous and Metamorphic Petrology	4

Social and Behavioral Ways of Knowing Course	3
Hours	15
Summer Term 2	
GEOL 302 Field Geology Methods	3
Hours	3
Fall Term 3	
ENGL 318 Science Writing	3
GEOG 385 Foundations of GIS	3
GEOL 324 Principles of Stratigraphy and Sedimentation	4
GEOL 345 Structural Geology	4
MATH 175 OR MATH 330 OR STAT 251	3
Hours	17
Spring Term 3	
GEOL 335 Geomorphology	3
GEOL 422 Principles of Geophysics	4
Social and Behavioral Ways of Knowing Course	3
International Course	3
Hours	13
Summer Term 3	
GEOL 490 Geology Field Camp or GEOL 489 or Virtual Field Camp	3
Hours	3
Fall Term 4	
GEOL 423 Principles of Geochemistry	3
PHYS 103 General Astronomy	3
PHYS 104 Astronomy Lab	1
American Diversity Course	3
Elective Course	3
Hours	13
Spring Term 4	
GEOG 401 Climatology	3
PLSC 205 General Botany	4
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	2
Hours	12
Total Hours	120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

Geology (M.S.)

Master of Science. Major in Geology.

General M.S. requirements apply. Prerequisites are the equivalent of an undergraduate major in the area of specialization. A written thesis is required for which ten credits (of the minimum of 30 credits for the degree) are permitted.

1. Graduates will demonstrate in-depth content knowledge in the professional sub-field of their choice and related, supporting sub-fields in geology, mathematics, and other sciences.
2. Students will carry out and complete an original thesis project. It is expected that they will contribute to the design and planning of this project, gather data, and interpret results. They will be proficient in discipline-specific skills that are specific to their thesis research projects and to their intended field of employment.

3. Graduates will be able to communicate their results in the form of written reports and oral and multimedia presentations.

Geology (Ph.D.)

Doctor of Philosophy. Major in Geology.

General Ph.D. requirements apply. Admission to the doctoral program is based on the compatibility of the student's research interests with those of the major professor, upon the availability of research support, and the student's academic record and potential. Applicants are expected to have the prerequisites as specified for the M.S. degree with a major in geology. Each research program is developed by the student and the major professor with the advisory committee's approval. Up to 45 credits are permitted in research and dissertation.

1. Graduates will demonstrate in-depth content knowledge in the professional sub-field of their choice and related, supporting sub-fields in geology, mathematics, and other sciences.
2. Students will carry out and complete an original dissertation project. It is expected that they will take primary responsibility for the design and planning of this project, gathering data, and interpreting results. They will be proficient in discipline-specific skills that are specific to their research projects and to their intended field of employment.
3. Graduates will be able to communicate their results in the form of written reports and oral and multimedia presentations.

Geology Minor

Code	Title	Hours
Select one of the following sequences:		4
GEOL 101 & 101L	Physical Geology and Physical Geology Lab	
GEOL 111 & 111L	Physical Geology for Science Majors and Physical Geology for Science Majors Lab	
GEOL 102	Historical Geology	3
GEOL 102L	Historical Geology Lab	1
Select 12 credits of electives in Geology:		12
Total Hours		20

Courses to total 20 credits for this minor

Groundwater Hydrology (M.S.)

Non-thesis Professional Option

This program is designed for individuals who wish to place less emphasis upon research in their plan of study, but want to gain experience in applying their knowledge to a substantial project of an applied nature. Projects may be aligned with internships or other work experiences. The student's advisory committee will consist of two faculty members from the Department. Projects must be documented and presented according to guidelines in the department handbook and approved by the student's committee.

Thesis Option

Each student's training and research plan is developed by the student and the major professor with the advisory committee's approval. Admission is based on the compatibility of the student's research interests with the areas of concentration offered by the department and the availability of a faculty member to serve as the student's mentor. A written thesis

is required, but the thesis may be comprised of a manuscript in a form acceptable for publication in a refereed journal, while otherwise fulfilling the requirements of the Graduate College.

Code	Title	Hours
ENVS 450 or SOIL 450	Environmental Hydrology	3
GEOL 534	Geostatistics	3
HYDR 509	Quantitative Hydrogeology	3
HYDR 512	Environmental Hydrogeology	3
HYDR 576	Fundamentals of Modeling Hydrogeologic Systems	3
TM 482	Project Engineering	3
TM 510	Technology Management Fundamentals	3
Choose Thesis on Non-Thesis Option from Below:		9
<i>Thesis Option:</i>		
Advisor-approved electives (3-6 credits)		
GEOL 500 or HYDR 500	Master's Research and Thesis (3-6 credits)	
<i>Non-Thesis Option:</i>		
Advisor-approved electives (6 credits)		
GEOL 599 or HYDR 599	Research (3 credits)	
Total Hours		30

The objective of this degree is to introduce students to concepts and professional practices used in the environmental and groundwater industry. After completing the required coursework, students will be able to:

- Understand fundamental concepts of groundwater hydrology (e.g., hydraulic conductivity, porosity, hydraulic head, Darcy's law), and apply these concepts to the solution of groundwater problems;
- Make and understand common measurements used in groundwater investigations, such as depth to water in wells, water pH and temperature, and well discharge, and interpret the results with a level of understanding expected of a groundwater professional;
- Plan, execute, and interpret data from groundwater tests commonly used in industry (i.e., aquifer slug and pumping tests);
- Understand groundwater quality issues and the fate and transport of groundwater constituents (contaminants and naturally-occurring substances) as they apply to site assessment, site characterization, and remediation;
- Have received an introduction to the basics of groundwater modeling using standard industry tools (i.e., MODFLOW), and be able to assess the application of groundwater simulations to consulting-type problems in work done by others;
- Have experience writing consulting-style reports, keeping legal-standard field notes, and an understanding of the process of planning for fieldwork in a professional setting, including such factors as logistics, budgeting, and the development of safety plans;
- Have an in-depth knowledge of some area of specialization, chosen by the student and relevant to the student's professional interests, within the broader field of groundwater hydrology. This knowledge is gained during the preparation of the professional paper required for completion of the degree requirements.

Groundwater Hydrology Minor

Code	Title	Hours
GEOL 101 or GEOL 111	Physical Geology Physical Geology for Science Majors	3
GEOL 101L or GEOL 111L	Physical Geology Lab Physical Geology for Science Majors Lab	1
MATH 175	Calculus II	4
GEOL 309	Ground Water Hydrology	3
GEOL 410	Groundwater Field Methods	3
HYDR 409	Quantitative Hydrogeology	3
One of the following:		3
GEOL 431	Chemical Hydrogeology	
HYDR 412	Environmental Hydrogeology	
BE 450	Environmental Hydrology	
Total Hours		20

Courses to total 20 credits for this minor.

Mathematics and Statistical Science

Hirotschi Abo, Chair (300 Carol Ryrie Brink Hall 83844-1103; phone 208-885-6742; mathstat@uidaho.edu (math@uidaho.edu)); <https://www.uidaho.edu/sci/mathstat> .

The need for persons with quantitative skills is increasing dramatically as the world grows more complex. Mathematicians and statisticians have employment opportunities in business, industry, government, and teaching. Training in these fields, with their emphasis on problem solving, analysis, and critical thinking, is excellent preparation for graduate programs in engineering, science, business, or law. In fact, persons planning careers in almost any field will find their opportunities enhanced by the study of mathematics and statistics. The programs are intended to provide students just such enhancement. It is generally the case that the person who develops his or her quantitative skills has increased ability to attack many of the complex problems of society. Advances in science, technology, the social sciences, business, industry, and government become more and more dependent on precise analysis and the extraction of information from large quantities of data. Environmental problems, for example, require careful analysis by persons (or teams of persons) with skills in mathematics, statistics, and computer science as well as in biology, geology, physics, and many other fields.

Undergraduate Programs

The B.S. degree in Mathematics has four options: the general option, the applied computation option, the applied mathematical biology option, and the applied modeling and data science option.

The B.S. degree in Statistics has two options: the general option and the actuarial science and finance option.

Minors are available in both Mathematics and Statistics.

Graduate Programs

Graduate degrees in Mathematics include the M.S., M.A.T., and Ph.D. degrees. Graduate training in mathematics prepares students for careers in teaching or research and development. Employment opportunities include universities, colleges, industries, and government agencies. The Ph.D. is generally required for teaching and research at the university

level. The M.S. qualifies students to teach at junior colleges, some four-year colleges, and for many positions in industry. The M.A.T. prepares students for secondary teaching and for some junior college positions. A baccalaureate degree in mathematics is generally required for admission to the graduate program; however, many students of science and technology can be admitted to the program with few undergraduate deficiencies.

In Statistics there is the Master of Science degree. Graduate study in statistics is designed for two types of students. Students whose undergraduate degrees are in subject matter disciplines will prepare for a career involving the application of statistical methods to their particular area of interest. Students with degrees in mathematics, computer science, or similar areas will prepare for a career in data analysis, statistical computing, teaching of introductory-level statistics, or to pursue a Ph.D. degree. Graduate certificate programs are also available in both Statistical Science and Data Science.

The M.A.T. in Mathematics, M.S. in Statistical Science, and the Certificate in Statistical Science are offered both on campus and online.

Faculty members in the Department of Mathematics and Statistical Science will be happy to answer questions about specific programs and courses. Such questions can also be addressed to the department chair (Brink 300; phone 208/885-6742).

Majors

- Mathematics (B.S.) (p. 484)
- Statistics (B.S.) (p. 489)

Minors

- Mathematics Minor (p. 489)
- Statistics Minor (p. 492)

Department of Mathematics and Statistical Science Graduate Program

- Mathematics (M.A.T.) (p. 488)
- Mathematics (M.S.) (p. 488)
- Mathematics (Ph.D.) (p. 488)
- Statistical Science (M.S.) (p. 489)

Certificates

- Data Science Graduate Academic Certificate (p. 484)
- Statistics Graduate Academic Certificate (p. 491)

Data Science Graduate Academic Certificate

All required coursework must be completed with a grade of 'B' or better (O-10-b (p. 94)).

Code	Title	Hours
MIS 555 or CS 575 or CS 579	Data Management for Big Data Machine Learning Data Science	3
STAT 517 or STAT 565	Statistical Learning and Predictive Modeling Computer Intensive Statistics	3

Select two of the following:		6
CS 472	Evolutionary Computation	
CS 475	Machine Learning	
OM 439	Systems and Simulation	
OM 456	Enterprise Quality Management	
MKTG 431	Marketing Analytics	
STAT 507	Experimental Design	
STAT 519	Multivariate Analysis	
STAT 565	Computer Intensive Statistics	

Total Hours 12

Courses to total 12 credits for this certificate. At least half of the credits must be completed at the graduate level.

Mathematics (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
Options		
Select one of the following options:		36-54
General (p. 484)		
Applied - Computation (p. 485)		
Applied - Modeling and Data Science (p. 485)		
Applied - Mathematical Biology (p. 485)		
Total Hours		53-71

A. General Option

This is the traditional curriculum in Mathematics. It is more mathematically rigorous than the other options. It is especially good for secondary education majors and students intending to go to graduate school in Mathematics or other sciences.

Code	Title	Hours
Math Courses		
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 461	Abstract Algebra I	3
MATH 471	Introduction to Analysis I	3
Select one of the following:		3
MATH 430	Advanced Linear Algebra	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 462	Abstract Algebra II	
MATH 472	Introduction to Analysis II	
MATH 476	Combinatorics	
Select four math courses above 310		12
Supporting Courses		
STAT 301	Probability and Statistics	3

CS 112	Computational Thinking and Problem Solving	3
or CS 120	Computer Science I	
Total Hours		33

Courses to total 120 credits for this degree

B. Applied - Computation Option

The emphasis is on the mathematics related to computer science and technology. With a major or minor in computer sciences, this is a good preparation for work in the computer industry.

Code	Title	Hours
Math Courses		
MATH 176	Discrete Mathematics	3
MATH 215	Proof via Number Theory	3
MATH 385	Theory of Computation	3
MATH 395	Analysis of Algorithms	3
MATH 415	Cryptography	3
MATH 428	Numerical Methods	3
or MATH 432	Numerical Linear Algebra	
MATH 452	Mathematical Statistics	3
or STAT 301	Probability and Statistics	
Select two additional courses from the following:		6
MATH 376	Discrete Mathematics II	
MATH 426	Discrete Optimization	
MATH 430	Advanced Linear Algebra	
MATH 432	Numerical Linear Algebra	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 461	Abstract Algebra I	
MATH 462	Abstract Algebra II	
MATH 476	Combinatorics	
Supporting Courses		
CS 120	Computer Science I	4
CS 121	Computer Science II	3
Total Hours		34

Courses to total 120 credits for this degree

C. Applied - Modeling and Data Science Option

The emphasis is on the mathematics used to model phenomena in engineering, science, business and economics. With a second major in one of these disciplines, this provides ideal preparation for graduate school.

Code	Title	Hours
Math Courses		
MATH 176	Discrete Mathematics	3
MATH 183	Introduction to Data Science in Python	3
MATH 428	Numerical Methods	3
or MATH 432	Numerical Linear Algebra	
MATH 451	Probability Theory	3
MATH 483	Foundations of Machine Learning	3

or MATH 438	Mathematical Modeling	
STAT 301	Probability and Statistics	3
or MATH 452	Mathematical Statistics	
Select four additional courses from the following:		12
CS 360	Database Systems	
CS/MATH 385	Theory of Computation	
CS/MATH 395	Analysis of Algorithms	
CS 411	Parallel Programming	
CS 415	Computational Biology: Sequence Analysis	
CS 420	Data Communication Systems	
CS 470	Artificial Intelligence	
CS 479	Data Science	
MATH 371	Mathematical Physics	
MATH 376	Discrete Mathematics II	
MATH 420	Complex Variables	
MATH 428	Numerical Methods	
MATH 432	Numerical Linear Algebra	
MATH 437	Mathematical Biology	
MATH 438	Mathematical Modeling	
MATH 452	Mathematical Statistics	
MATH 453	Stochastic Models	
MATH 476	Combinatorics	
MATH 480	Partial Differential Equations	
MATH 483	Foundations of Machine Learning	
MIS 453	Database Design	
MIS 455	Data Management for Big Data	
ME 313	Dynamic Modeling of Engineering Systems	
SOC 417	Social Data Analysis	
STAT 431	Statistical Analysis	

Quantitative Electives

Select 6 credits of advisor-approved quantitative electives in Science, Engineering, Business, Economics, etc. These electives can be drawn from the above list, as long as they are not used to fulfill the elective requirement.

Total Hours 36

Courses to total 120 credits for this degree

D. Applied - Mathematical Biology Option

This option offers training across Mathematics and Biology and provides the background to pursue a career in technical industries and to obtain graduate degrees in Biomathematics, Biostatistics, and Bioinformatics.

Code	Title	Hours
Math Courses		
MATH 437	Mathematical Biology	3
MATH 451	Probability Theory	3
MATH 453	Stochastic Models	3
MATH 480	Partial Differential Equations	3
Select one course from the following:		3
MATH 428	Numerical Methods	
MATH 432	Numerical Linear Algebra	
Select three courses from the following:		9
MATH 420	Complex Variables	

MATH 430	Advanced Linear Algebra	
MATH 438	Mathematical Modeling	
MATH 452	Mathematical Statistics	
MATH 471	Introduction to Analysis I	
MATH 472	Introduction to Analysis II	
MATH 483	Foundations of Machine Learning	

Biology Courses
 Select 9 credits of advisor-approved electives in the biological sciences 9

Supporting Courses
 Select one from the following 3

CS 120	Computer Science I	
MATH 183	Introduction to Data Science in Python	
STAT 419	Introduction to SAS/R Programming	
STAT 426	SAS Programming	
STAT 427	R Programming	

Total Hours 36

Courses to total 120 credits for this degree

General Option

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
COMM 101 Fundamentals of Oral Communication	3
Scientific Ways of Knowing Course	4
American Diversity Course	3
Hours	16

Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
MATH 144 Analytic Trigonometry	1
MATH 170 Calculus I	4
Humanistic and Artistic Ways of Knowing Course	3
CS 112 OR CS 120	3
Hours	14

Fall Term 2	Hours
MATH 175 Calculus II	4
MATH 176 Discrete Mathematics	3
International Course	3
Social and Behavioral Ways of Knowing Course	3
Elective Course	2
Hours	15

Spring Term 2	Hours
MATH 215 Proof via Number Theory	3
MATH 275 Calculus III	3
MATH 330 Linear Algebra	3
Social and Behavioral Ways of Knowing Course	3
Scientific Ways of Knowing Course	4
Hours	16

Fall Term 3	Hours
STAT 301 Probability and Statistics	3
MATH 310 Ordinary Differential Equations	3
MATH 461 Abstract Algebra I	3
Elective Course	3
Elective Course	3
Hours	15

Spring Term 3	Hours
Mathematics above 310, Major Elective Course	3
Humanistic and Artistic Ways of Knowing Course	3

Elective Course	3
Elective Course	3
MATH 430 OR MATH 452 OR MATH 453 OR MATH 462 OR MATH 472 OR MATH 476	3

Hours 15

Fall Term 4	Hours
MATH 415 Cryptography	3
MATH 471 Introduction to Analysis I	3
Mathematics above 310, Major Elective Course	3
Elective Course	3
Elective Course	3
Hours	15

Spring Term 4	Hours
Mathematics above 310, Major Elective Course	3
Mathematics above 310, Major Elective Course	3
Elective Course	3
Elective Course	3
Elective Course	2
Hours	14

Total Hours 120

Applied - Computation Option

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
American Diversity Course	3
Oral Communication Course	3
Scientific Ways of Knowing Course	4
Hours	16

Spring Term 1	Hours
CS 120 Computer Science I	4
ENGL 102 Writing and Rhetoric II	3
MATH 144 Analytic Trigonometry	1
MATH 170 Calculus I	4
Humanistic and Artistic Ways of Knowing Course	3
Hours	15

Fall Term 2	Hours
CS 121 Computer Science II	3
MATH 175 Calculus II	4
MATH 176 Discrete Mathematics	3
International Course	3
Elective Course	2
Hours	15

Spring Term 2	Hours
MATH 215 Proof via Number Theory	3
MATH 275 Calculus III	3
MATH 330 Linear Algebra	3
Scientific Ways of Knowing Course	4
Social and Behavioral Ways of Knowing Course	3
Hours	16

Fall Term 3	Hours
MATH 310 Ordinary Differential Equations	3
MATH 385 Theory of Computation	3
Elective Course	3
Social and Behavioral Ways of Knowing Course	3
MATH 452 OR STAT 301	3
Hours	15

Spring Term 3	Hours
MATH 395 Analysis of Algorithms	3
Humanistic and Artistic Ways of Knowing Course	3
Elective Course	3

Elective Course	3
MATH 376 OR MATH 426 OR MATH 430 OR MATH 432 OR MATH 451 OR MATH 452 OR MATH 461 OR MATH 462 OR MATH 476	3

Hours 15

Fall Term 4

MATH 415	Cryptography	3
Elective Course		3
Elective Course		3
Elective Course		3
MATH 376 OR MATH 426 OR MATH 432 OR MATH 451 OR MATH 452 OR MATH 461 OR MATH 462 OR MATH 476		3

Hours 15

Spring Term 4

Elective Course		3
Elective Course		3
Elective Course		3
1 credit Elective Course		1
MATH 428 OR MATH 432		3

Hours 13

Total Hours 120

Applied - Modeling and Data Science Option

Fall Term 1

ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
American Diversity Course		3
Oral Communication Course		3
Scientific Ways of Knowing Course		4

Hours 16

Spring Term 1

ENGL 102	Writing and Rhetoric II	3
MATH 144	Analytic Trigonometry	1
MATH 170	Calculus I	4
Humanistic and Artistic Ways of Knowing Course		3
Scientific Ways of Knowing Course		4

Hours 15

Fall Term 2

MATH 175	Calculus II	4
MATH 176	Discrete Mathematics	3
Social and Behavioral Ways of Knowing Course		3
International Course		3
Elective Course		2

Hours 15

Spring Term 2

MATH 183	Introduction to Data Science in Python	3
MATH 275	Calculus III	3
MATH 330	Linear Algebra	3
Elective Course		3
Social and Behavioral Ways of Knowing Course		3

Hours 15

Fall Term 3

MATH 310	Ordinary Differential Equations	3
MATH 451	Probability Theory	3
Elective Course		3
Elective Course		3
Mathematics, Major Elective Course		3

Hours 15

Spring Term 3

MATH elec, or Senior Exp., Major Elective Course		3
Modeling, Major Elective Course		3
Humanistic and Artistic Ways of Knowing Course		3

Elective Course	3
MATH 452 OR STAT 301	3

Hours 15

Fall Term 4

Modeling, Major Elective Course	3
MATH elective or Senior Exp., Major Elective Course	3
Mathematics, Major Elective Course	3
Elective Course	3
MATH 438 OR MATH 483	3

Hours 15

Spring Term 4

Mathematics, Major Elective Course	3
Mathematics, Major Elective Course	3
Elective Course	3
Elective Course	2
MATH 428 OR MATH 432	3

Hours 14

Total Hours 120

Applied - Mathematical Biology Option

Fall Term 1

ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
BIOL 114	Organisms and Environments	4
COMM 101	Fundamentals of Oral Communication	3
American Diversity Course		3

Hours 16

Spring Term 1

ENGL 102	Writing and Rhetoric II	3
MATH 144	Analytic Trigonometry	1
MATH 170	Calculus I	4
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
Humanistic and Artistic Ways of Knowing Course		3

Hours 15

Fall Term 2

MATH 175	Calculus II	4
BIOL 115	Cells and the Evolution of Life	3
BIOL 115L	Cells and the Evolution of Life Laboratory	1
Social and Behavioral Ways of Knowing Course		3
International Course		3

Hours 14

Spring Term 2

MATH 275	Calculus III	3
MATH 330	Linear Algebra	3
Humanistic and Artistic Ways of Knowing Course		3
UPDV Biology, Major Elective Course		3
STAT 251 OR STAT 301		3

Hours 15

Fall Term 3

BIOL 310	Genetics	3
MATH 451	Probability Theory	3
Elective Course		3
Elective Course		3
MATH 310 OR MATH 453 OR STAT 431		3

Hours 15

Spring Term 3

MATH 437	Mathematical Biology	3
MATH 452	Mathematical Statistics	3
UPDV Biology, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3

Elective Course		3
Hours		15
Fall Term 4		
BIOL 456	Computer Skills for Biologists	3
MATH 415	Cryptography	3
UPDV Biology, Major Elective Course		3
Elective Course		3
MATH 428 OR MATH 430 OR MATH 480		3
Hours		15
Spring Term 4		
UPDV Biology, Elective Course		3
Elective Course		3
Elective Course		3
MATH 310 OR MATH 453 OR STAT 431		3
MATH 428 OR MATH 430 OR MATH 480		3
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students should be able to think critically, apply problem solving strategies, and be able to construct and defend mathematical proofs.
2. Students should be able to use mathematical structures and the language of mathematics to formulate models for real-world problems.
3. Students should be able to effectively communicate their work and should gain experience working in collaborative settings.
4. Students should be able to interpret and extract relevant information from data using appropriate modeling techniques.

Mathematics (M.A.T.)

Master of Arts in Teaching. Major in Mathematics.

General M.A.T. requirements apply. Under advisement of the major professor and committee, a broadly based study plan is designed taking into consideration the candidate's interests and teaching needs. The plan should include mathematics courses from several pure mathematics areas (for example, algebra, topology, analysis, geometry, and number theory). A three-hour written examination is given over the courses in the study plan. Students entering the M.A.T. program will be considered deficient if they have not completed a standard sequence in calculus (equivalent to MATH 170-MATH 175-MATH 275).

The M.A.T. degree in mathematics may also be obtained via distance learning. This distance learning program is designed to meet the needs of in-service teachers. The requirements outlined above apply, but here the study plan is designed using courses that are available by video or in summer programs on-campus or at off-campus sites.

Please see Requirements for M.A.T. Math (<https://www.uidaho.edu/sci/mathstat/academics/graduate/graduate-degree-options/mat/>) for details and program requirements on earning the Master of Arts in Teaching in Mathematics degree.

1. The student will demonstrate knowledge of intermediate graduate level mathematics.
2. The student will gain knowledge of current teaching approaches in mathematics.

Mathematics (M.S.)

Master of Science. Major in Mathematics.

An undergraduate major in mathematics or its equivalent is a prerequisite. There is both a thesis and a non-thesis option. Both options have the same credit requirements. Of the minimum of 30 credits required for this degree, at least 18 credits must be in mathematics at the 500 level (excluding MATH 500, MATH 599, seminars, and directed study); the remaining 12 credits may include 400 and 500 level courses in mathematics, and 300 or 400 level courses in supporting areas. Mathematics Education (MTHE) credits may not be counted. For the non-thesis option, a three-hour comprehensive written examination covering 6 mathematics courses chosen by the student (with at least 5 at the 500 level) is required. For the thesis option, the student writes a thesis (which may be expository in nature) under the guidance of a thesis committee. A final examination in the form of an oral defense of the thesis is required.

Please see the Mathematics graduate handbook for details and program requirements on earning the Master of Science in Mathematics degree.

1. The student can effectively communicate mathematics to undergraduate students through teaching.
2. The student is able to integrate the knowledge from several courses. They are able to think mathematically and critically.
3. The student can demonstrate knowledge in mathematics that justifies being awarded an M.S. degree and that prepares the student to pursue, should he or she want to do so, a Ph.D.

Mathematics (Ph.D.)

Doctor of Philosophy. Major in Mathematics.

In addition to the general university requirements for the Ph.D., the department requires that 36 credits of graduate-level mathematics (excluding MATH 500, MATH 510, MATH 599, MATH 600, seminars, and directed study) be completed or transferred (with at least 18 credits completed at UI).

The preliminary examination must be passed no later than the end of the student's fourth year of graduate study and before the dissertation is started. The preliminary examination is composed of three parts covering the areas of algebra and analysis, and one of topology, combinatorics, or differential equations. These are all given in a one-week period and are graded by a departmental committee that may recommend additional testing in one or more of the specific areas if satisfactory results are not obtained. The committee may also recommend an oral examination in certain areas by the supervisory committee.

The dissertation must be of an original research nature and be in an area spanned by the research interests of the major professor. A final examination that amounts to a defense of the dissertation is required. Acceptability of the dissertation is to be determined by the student's major professor and graduate committee.

Please see Requirements for PhD in Mathematics (<https://www.uidaho.edu/sci/mathstat/academics/graduate/graduate-degree->

options/phd-requirements/) for details and program requirements on earning the PhD in Mathematics degree.

1. The student can conduct research in mathematics.
2. The student has prepared for success in the job market by being able to give research-level and undergraduate-level lectures, and by being able to articulate teaching and research goals.
3. The student can demonstrate a knowledge of advanced mathematics.

Mathematics Minor

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
Select 6 Math courses from the following:		18
MATH 275	Calculus III	
STAT 301	Probability and Statistics	
Math Courses numbered 303-499		
Total Hours		26

Courses to total 26 credits for this minor

Statistical Science (M.S.)

Master of Science. Major in Statistical Science.

Students seeking admission to the MS program in Statistical Science should have completed at least two semesters in college calculus comparable to MATH 170 and MATH 175, and two classes in applied statistics including STAT 431 or a comparable course. Familiarity with programming is expected, and familiarity with numerical or statistical computing environments is desirable. Students are not required to have an undergraduate degree in statistics.

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Mathematics and Statistical Science. See the College of Graduate Studies (p. 292) section for the applicable general requirements for M.S. degree.

An individual graduate program is tailored for the student, but all students must complete a basic core requirement of 24 credits and either:

1. A thesis (STAT 500¹),
2. An internship report (STAT 598), or
3. A consulting option or course (6 credits of STAT 597). Credits from STAT 431 will not count toward the degree.

Code	Title	Hours
Core Requirements		
STAT 422	Survey Sampling Methods	3
STAT 451	Probability Theory	3
STAT 452	Mathematical Statistics	3
STAT 501	Seminar	1
STAT 507	Experimental Design	3
STAT 519	Multivariate Analysis	3
STAT 550	Regression	3

STAT 565	Computer Intensive Statistics	3
STAT 597	Consulting Practicum	2

Total Hours 24

1

A maximum of 6 credits of STAT 500 Master's Research and Thesis may be counted toward the thesis degree option.

1. The student will be able to perform common tasks such as reading in data, performing data management, and performing routine statistical analyses using statistical software such as SAS and/or R.
2. The student can apply results from probability theory and the theory of statistical inference.
3. The student will be able to communicate statistical methods and information from analyses clearly and effectively both orally and in written form.
4. The student will be able to apply statistical knowledge to real life problems effectively and ethically, understanding the theoretical assumptions and practical limitations of the methodologies applied.

Statistics (B.S.)

Required course work includes the university requirements (see regulation J-3 (p. 78)) and:

Code	Title	Hours
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 330	Linear Algebra	3
Select one of the following options:		39-58
General (p. 489)		
Actuarial Science and Finance (p. 490)		

Total Hours 53-72

A. General Option

Code	Title	Hours
STAT 301	Probability and Statistics	3
STAT 407	Experimental Design	3
STAT 422	Survey Sampling Methods	3
STAT 431	Statistical Analysis	3
STAT 436	Applied Regression Modeling	3
STAT 451	Probability Theory	3
STAT 452	Mathematical Statistics	3
Select two of the following:		6

CS 120	Computer Science I	
MATH 183	Introduction to Data Science in Python	
STAT 426	SAS Programming	
STAT 427	R Programming	
Other approved courses		
Select 12 credits from the following:		12
CS 479	Data Science	
MATH 310	Ordinary Differential Equations	
MATH 428	Numerical Methods	
MATH 437	Mathematical Biology	

MATH 438	Mathematical Modeling
MATH 471	Introduction to Analysis I
MATH 483	Foundations of Machine Learning
MIS 455	Data Management for Big Data
STAT 414	Nonparametric Statistics
STAT 417	Statistical Learning and Predictive Modeling
STAT 418	Multivariate Analysis
STAT 433	Econometrics
STAT 435	Introduction to Bayesian Statistics
STAT 456	Enterprise Quality Management
STAT 514	Nonparametric Statistics
STAT 517	Statistical Learning and Predictive Modeling
STAT 535	Introduction to Bayesian Statistics

Total Hours **39**

Courses to total 120 Credits for this degree

B. Actuarial Science and Finance Option

Code	Title	Hours
Math Courses		
MATH 310	Ordinary Differential Equations	3
MATH 451	Probability Theory	3
MATH 452	Mathematical Statistics	3
400-level MATH courses: Three additional courses chosen from MATH course numbered 400 and above. May include STAT 422.		9
Supporting Courses		
ACCT 201	Introduction to Financial Accounting	3
ACCT 202	Introduction to Managerial Accounting	3
CS 112	Computational Thinking and Problem Solving	3-4
or CS 120	Computer Science I	
FIN 301	Financial Resources Management	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
STAT 426	SAS Programming	3
or STAT 427	R Programming	
or MATH 183	Introduction to Data Science in Python	
STAT 431	Statistical Analysis	3
STAT 433	Econometrics	3
or STAT 436	Applied Regression Modeling	
Select one of the following:		4-6
ECON 201	Principles of Macroeconomics	
& ECON 202	and Principles of Microeconomics	
ECON 272	Foundations of Economic Analysis	
Select three courses from the following:		7-9
ECON 351	Intermediate Macroeconomic Analysis	
ECON 352	Intermediate Microeconomic Analysis	
FIN 302	Intermediate Financial Management	
FIN 381	International Finance	
FIN 408	Security Analysis	
FIN 463	Portfolio Management	
FIN 464	Derivatives and Risk Management	
FIN 465	Introduction to Market Trading	
FIN 469	Risk and Insurance	

MATH 455	Applied Actuarial Science
MATH 483	Foundations of Machine Learning

Total Hours **53-58**

Courses to total 120 credits for this degree

General Option

	Hours	
Fall Term 1		
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
Scientific Ways of Knowing Course		4
Oral Communication Course		3
Elective Course		1
Hours	14	
Spring Term 1		
ENGL 102	Writing and Rhetoric II	3
MATH 144	Analytic Trigonometry	1
MATH 170	Calculus I	4
Scientific Ways of Knowing Course		4
Humanistic and Artistic Ways of Knowing Course		3
Hours	15	
Fall Term 2		
MATH 175	Calculus II	4
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Elective Course		3
Hours	16	
Spring Term 2		
MATH 275	Calculus III	3
MATH 330	Linear Algebra	3
STAT 301	Probability and Statistics	3
Social and Behavioral Ways of Knowing Course		3
Elective Course		3
Hours	15	
Fall Term 3		
STAT 422	Survey Sampling Methods	3
STAT 431	Statistical Analysis	3
American Diversity Course		3
CS 479 OR MATH 310 OR MATH 428 OR MATH 437 OR MATH 438 OR MATH 471 OR MATH 483 OR MIS 455 OR STAT 414 OR STAT 417 OR STAT 418 OR STAT 433 OR STAT 435 OR STAT 456 OR STAT 514 OR STAT 517 OR STAT 535		3
CS 120 OR MATH 183 OR STAT 426 OR STAT 427		3
Hours	15	
Spring Term 3		
STAT 407	Experimental Design	3
STAT 436	Applied Regression Modeling	3
International Course		3
CS 120 OR STAT 426 OR STAT 427		3
CS 479 OR MATH 310 OR MATH 428 OR MATH 437 OR MATH 438 OR MATH 471 OR MATH 483 OR MIS 455 OR STAT 414 OR STAT 417 OR STAT 418 OR STAT 433 OR STAT 435 OR STAT 456 OR STAT 514 OR STAT 517 OR STAT 535		3
Hours	15	
Fall Term 4		
STAT 451	Probability Theory	3
Elective Course		3
Elective Course		3
Elective Course		3
CS 479 OR MATH 310 OR MATH 428 OR MATH 437 OR MATH 438 OR MATH 471 OR MATH 483 OR MIS 455 OR STAT 414 OR STAT 417 OR STAT 418 OR STAT 433 OR STAT 435 OR STAT 456 OR STAT 514 OR STAT 517 OR STAT 535		3
Hours	15	

Spring Term 4		
STAT 452	Mathematical Statistics	3
MATH 415	Cryptography	3
Elective Course		3
Elective Course		3
CS 479 OR MATH 310 OR MATH 428 OR MATH 437 OR MATH 438 OR MATH 471 OR MATH 483 OR MIS 455 OR STAT 414 OR STAT 417 OR STAT 418 OR STAT 433 OR STAT 435 OR STAT 456 OR STAT 514 OR STAT 517 OR STAT 535		3
Hours		15
Total Hours		120

ECON 351 OR ECON 352 OR FIN 302 OR FIN 381 OR FIN 408 OR FIN 463 OR FIN 464 OR FIN 465 OR FIN 469 OR MATH 455 OR MATH 483		3
Hours		15
Spring Term 4		
MATH 452	Mathematical Statistics	3
400 level Mathematics, Major Elective Course		3
ECON 351 OR ECON 352 OR FIN 302 OR FIN 381 OR FIN 408 OR FIN 463 OR FIN 464 OR FIN 465 OR FIN 469 OR MATH 455 OR MATH 483		3
STAT 433 OR STAT 436		3
Elective Course		2
Hours		14
Total Hours		120

Actuarial Science and Finance Option

Fall Term 1	Hours
ENGL 101 Writing and Rhetoric I	3
MATH 143 College Algebra	3
Scientific Ways of Knowing Course	4
Oral Communication Course	3
Elective Course	2
Hours	15

Spring Term 1	Hours
ENGL 102 Writing and Rhetoric II	3
MATH 144 Analytic Trigonometry	1
MATH 170 Calculus I	4
Scientific Ways of Knowing Course	4
(ECON 201 AND ECON 202)	3
Hours	15

Fall Term 2	Hours
ACCT 201 Introduction to Financial Accounting	3
MATH 175 Calculus II	4
Social and Behavioral Ways of Knowing Course	3
Humanistic and Artistic Ways of Knowing Course	3
CS 112 OR CS 120	3
Hours	16

Spring Term 2	Hours
ACCT 202 Introduction to Managerial Accounting	3
MATH 275 Calculus III	3
Humanistic and Artistic Ways of Knowing Course	3
STAT 251 OR STAT 301	3
(ECON 201 AND ECON 202)	3
Hours	15

Fall Term 3	Hours
FIN 301 Financial Resources Management	3
MATH 310 Ordinary Differential Equations	3
MATH 330 Linear Algebra	3
American Diversity Course	3
Elective Course	3
Hours	15

Spring Term 3	Hours
STAT 426 SAS Programming	3
or STAT 427 or R Programming	
or MATH 183 or Introduction to Data Science in Python	
400 level Mathematics, Major Elective Course	3
International Course	3
Elective Course	3
ECON 351 OR ECON 352 OR FIN 302 OR FIN 381 OR FIN 408 OR FIN 463 OR FIN 464 OR FIN 465 OR FIN 469 OR MATH 455 OR MATH 483	3
Hours	15

Fall Term 4	Hours
MATH 451 Probability Theory	3
STAT 431 Statistical Analysis	3
400 level Mathematics, Major Elective Course	3
Elective Course	3

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

General Option

1. The student can apply fundamental theory in probability and statistical inference.
2. The student can apply and evaluate statistical models.
3. The student can apply statistical computing skills for data analysis and data science.
4. The student can demonstrate effective communication skills.

Actuarial Science and Finance Option

1. The student can apply statistical computing skills for data analysis and data science.

Statistics Academic Graduate Certificate

STAT 431 or similar course preparation must be completed prior to pursuing this academic certificate. At least half of the credits used for this certificate must be at the 500 level. All required coursework must be completed with a grade of 'B' or better (0-10-b (p. 94)).

Code	Title	Hours
STAT 422	Survey Sampling Methods	3
or STAT 507	Experimental Design	
Select additional courses from the following:		9
STAT 419	Introduction to SAS/R Programming (Choose only one of these three)	
or STAT 426	SAS Programming	
or STAT 427	R Programming	
STAT 422	Survey Sampling Methods	
STAT 451	Probability Theory	
STAT 452	Mathematical Statistics	
STAT 507	Experimental Design	
STAT 514	Nonparametric Statistics	
STAT 516	Applied Regression Modeling	
STAT 517	Statistical Learning and Predictive Modeling	
STAT 519	Multivariate Analysis	
STAT 535	Introduction to Bayesian Statistics	

STAT 555	Statistical Ecology	
STAT 565	Computer Intensive Statistics	
Other advisor-approved electives		
Total Hours		12

Courses to total 12 credits for this certificate

1. The student will be able to conduct a statistical analysis using methods that are appropriate for their data.
2. The student can diagnose whether the assumptions of the chosen statistical method are valid.
3. The student can clearly explain the results of the statistical analysis and if the statistical method(s) are valid.

Statistics Minor

Code	Title	Hours
STAT 431	Statistical Analysis	3
MATH 160 or MATH 170	Survey of Calculus Calculus I	4
STAT 251 or STAT 301	Statistical Methods Probability and Statistics	3
Select four courses from the following:		12
MATH 330	Linear Algebra	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MKTG 421	Marketing Research & Analysis	
STAT 407	Experimental Design	
STAT 419 or STAT 426 or STAT 427	Introduction to SAS/R Programming SAS Programming R Programming	
STAT 422	Survey Sampling Methods	
STAT 433	Econometrics	
STAT 436	Applied Regression Modeling	
STAT 456	Enterprise Quality Management	
STAT 514	Nonparametric Statistics	
STAT 519	Multivariate Analysis	
Total Hours		22

Courses to total 22 credits for this minor

Department of Physics

John Hiller, Dept. Chair (311A Engineering-Physics Bldg.; phone 208-885-7822; www.uidaho.edu/sci/physics (<https://www.uidaho.edu/sci/physics/>))

Physics is the scientific study of the nature and behavior of matter and energy. On the basis of quantitative observations, physicists develop theories to describe the observed behavior. Further experiments and observations are used to verify or refine the theories. The scientific method demands logical and mathematical rigor. The wealth of applications of physics to technology appeals to pragmatic persons, yet physics has much greater similarity to the arts and humanities than is commonly realized because of the intellectual curiosity and creativity on which it is built.

The physics program at UI introduces students in technical and non-technical curricula alike to the scientific method and to physical laws. The B.A. and B.S. curricula in physics emphasize a broad liberal-arts education and the core subjects in physics. Many B.A. and B.S. recipients go on to graduate study in physics or related disciplines.

Training in the theory, history, and philosophy of physics is provided by the required core courses and electives in most of the major areas of specialization. Formal laboratory courses and directed research familiarize students with experimental techniques, modern instrumentation, and computers. Equipment in the department's research laboratories includes low-temperature, strong magnetic field, high-vacuum, and vapor deposition facilities, electron and atomic beam apparatus, plasma devices, various lasers, spectrometers, optical telescopes, and nuclear radiation detectors. All offices, laboratories, and classrooms have computer network connections. The program is supported by a machine shop and a computer services shop. Collaborations with other universities and research institutes provide access to an even wider range of facilities.

The department offers graduate curricula leading to the M.S. and Ph.D. degrees. A bachelor's degree in physics is normally required as preparation for graduate study. Students with a bachelor's degree in another physical science, engineering, or mathematics will generally qualify after removal of a few upper-division-level deficiencies.

Research in the Department of Physics emphasizes the areas of condensed matter physics, nuclear physics, atomic physics, astrophysics, and biophysics. In addition, there is an interest in research on physics teaching.

The M.S. is not a prerequisite for the Ph.D., but beginning doctoral students may earn the M.S. if they wish. General departmental course requirements exist for the M.S. and Ph.D. degrees in addition to the general requirements of the Graduate College. Other course requirements are specified in the student's study plan, developed by the student and their advisor and approved by the student's supervisory committee. All graduate students are encouraged to gain some teaching experience during the course of their graduate studies.

Physics Department Statement of Objectives

Undergraduate Program

Our goal is to provide students with a qualitative and quantitative understanding of the core topics in theoretical physics: classical mechanics, electricity and magnetism, modern physics, quantum mechanics, thermal physics, and mathematical methods, as well as a familiarity with the experimental techniques on which advances in physics are based. In addition, it is expected that each student will develop a more detailed knowledge of several special areas in physics such as atomic and molecular physics, nuclear and particle physics, classical optics and quantum optics, solid state physics, astronomy, relativity and computational physics.

In the process of developing specific knowledge of areas in physics, students will learn to analyze physical phenomena using basic physical principles and acquire skills in basic logic and reasoning, mathematics and computation, problem solving, experimental technique, and oral and written communication.

Students completing the undergraduate program should be well prepared for further study at the graduate level or to apply their skills

successfully in other professional settings. They will be able to effectively communicate orally and in writing either with co-workers in a team effort or with non-scientists in public discussions of scientific issues

Graduate Program

In the graduate program, we aim to deepen a student's basic knowledge and understanding of theoretical and experimental physics as well as to guide them to achieving expert status in a particular area of contemporary interest to the physics community. By carrying out a research project in collaboration with a major-professor acting as mentor, the student will develop the skills required to initiate, and carry to completion, an independent research program upon obtaining an advanced degree.

Faculty members in the department will be happy to discuss programs in detail with interested persons. Requests for information or a tour of the facilities can be made by a letter, e-mail, or telephone call (208-885-6380) to the department.

Majors

- Physics (B.S.) (p. 494)
- Physics (B.A.) (p. 493)

Minors

- Physics Minor (p. 498)

Physics Graduate Program

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Physics. See the College of Graduate Studies (p. 292) section for the general requirements applicable to each degree.

- Physics (M.S.) (p. 496)
- Physics (Ph.D.) (p. 497)

Physics (B.A.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CS 120	Computer Science I	4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
PHYS 200	Physics Seminar	1
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
PHYS 321	Analytical Mechanics	3

PHYS 341	Electromagnetic Fields I	3
PHYS 400	Seminar	2
Select 11 credits of Upper-Division Physics courses		11
Select 6 credits of Upper-Division Mathematics courses		6
Select one upper-division Humanities course ¹		3
Select one upper-division Social Science course ¹		3
Select any upper-division course approved by student's advisor		4
Total Hours		74

Courses to total 120 credits for this degree

1

In addition to the minimum university-wide general education requirements.

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
PHYS 200	Physics Seminar	1
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3
Elective Course		1
Hours		15

Spring Term 1		Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
ENGL 102	Writing and Rhetoric II	3
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
MATH 170	Calculus I	4
Hours		15

Fall Term 2		Hours
CHEM 112	General Chemistry II	4
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
CHEM 112L	General Chemistry II Laboratory	1
MATH 175	Calculus II	4
Social and Behavioral Ways of Knowing Course		3
Hours		16

Spring Term 2		Hours
CS 120	Computer Science I	4
MATH 275	Calculus III	3
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
1 credit Elective Course		1
Hours		14

Fall Term 3		Hours
PHYS 321	Analytical Mechanics	3
PHYS 341	Electromagnetic Fields I	3
MATH 310	Ordinary Differential Equations	3
American Diversity Course		3
UPDV Physics, Major Elective Course		3
Hours		15

Spring Term 3		Hours
UPDV Mathematics, Major Elective Course		3
UPDV Physics, Major Elective Course		3
International Course		3
Humanistic and Artistic Ways of Knowing Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		15

Fall Term 4		
UPDV Humanities, Major Elective Course		3
PHYS 400	Seminar	1
Elective Course		3
UPDV Physics, Major Elective Course		3
Elective Course		2
Elective Course		3
Hours		15
Spring Term 4		
PHYS 400	Seminar	1
PHYS 492	Senior Research	1
UPDV Social Science, Major Elective Course		3
UPDV Physics, Major Elective Course		4
UPDV Approved Elective, Major Elective Course		4
Elective Course		2
Hours		15
Total Hours		120

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

1. Students are thoroughly trained in the various sub-disciplines of physics. They have mastered the principles of mechanics, quantum mechanics, electromagnetic fields, thermal statics, and some advanced topics in physics, such as astrophysics and computational physics.
2. Students can communicate effectively, both orally and in writing, their scientific observations and their interpretations of physical laws.
3. Students are intellectually prepared to partake in physics research in a meaningful way.

Physics (B.S.)

Required course work includes the university requirements (see regulation J-3 (p.)) and:

Code	Title	Hours
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
CS 120	Computer Science I	4
MATH 170	Calculus I	4
MATH 175	Calculus II	4
MATH 275	Calculus III	3
MATH 310	Ordinary Differential Equations	3
MATH 330	Linear Algebra	3
PHYS 200	Physics Seminar	1
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3

PHYS 321	Analytical Mechanics	3
PHYS 341	Electromagnetic Fields I	3
PHYS 351	Introductory Quantum Mechanics I	3
PHYS 400	Seminar	2

Emphases	
Select one of the following emphases:	24-35
General Physics (p.)	
Applied Physics (p.)	
Total Hours	80-91

A. General Physics Emphasis

Code	Title	Hours
PHYS 333	Statistical Thermodynamics	3
PHYS 342	Electromagnetic Fields II	3
PHYS 371	Mathematical Physics	3
PHYS 411	Advanced Physics Lab	4
Select 11 credits of Physics electives numbered 400 or above, including at least 9 credits of non-lab courses		11
Total Hours		24

Courses to total 120 credits for this degree

B. Applied Physics Emphasis

Code	Title	Hours
PHYS 411	Advanced Physics Lab	4
Select 4 credits from the following:		4
PHYS 490	Research	
PHYS 492	Senior Research	

In addition to the specific Applied Physics requirements, select six 3-credit courses numbered 300 or above from the following subject prefixes:¹

BE
BIOL
CE
CHE
CHEM
CS
ECE
ENGR
GEOE
GEOG
GEOL
HYDR
MATH
ME
NE
PHYS
STAT

In addition to the specific Applied Physics requirements and electives chosen above, select three 3-credit courses numbered 400 or above from the following subject prefixes:¹

BE
BIOL

CE	
CHE	
CHEM	
CS	
ECE	
ENGR	
GEOE	
GEOG	
GEOL	
HYDR	
MATH	
ME	
NE	
PHYS	
STAT	
Total Hours	35

1

These cannot be PHYS 490 or other research courses. They should be standard 3-credit lecture courses.

Courses to total 120 credits for this degree

General Physics Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
PHYS 200	Physics Seminar	1
MATH 144	Analytic Trigonometry	1
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3
Elective Course		1
Hours		15
Spring Term 1		
CS 120	Computer Science I	4
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		15
Fall Term 2		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
MATH 175	Calculus II	4
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 2		
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 275	Calculus III	3
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
Elective Course		1
Hours		15
Fall Term 3		
MATH 310	Ordinary Differential Equations	3
PHYS 321	Analytical Mechanics	3

PHYS 341	Electromagnetic Fields I	3
PHYS 371	Mathematical Physics	3
American Diversity Course		3

Hours	15
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Spring Term 3

MATH 330	Linear Algebra	3
PHYS 342	Electromagnetic Fields II	3
PHYS 351	Introductory Quantum Mechanics I	3
Humanistic and Artistic Ways of Knowing Course		3
International Course		3

Hours	15
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Fall Term 4

PHYS 333	Statistical Thermodynamics	3
PHYS 400	Seminar	1
400 level Physics, Major Elective Course		3
400 level Physics, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Elective Course		2

Hours	15
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Spring Term 4

PHYS 411	Advanced Physics Lab	4
PHYS 400	Seminar	1
400 level Physics, Major Elective Course		3
400 level Physics, Major Elective Course		2
Senior Experience Course		3
Elective Course		2

Hours	15
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Total Hours	120
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Applied Physics Emphasis

Fall Term 1		Hours
ENGL 101	Writing and Rhetoric I	3
MATH 143	College Algebra	3
MATH 144	Analytic Trigonometry	1
PHYS 200	Physics Seminar	1
Humanistic and Artistic Ways of Knowing Course		3
Oral Communication Course		3
Humanistic and Artistic Ways of Knowing Course		3
Hours		17
Spring Term 1		
CS 120	Computer Science I	4
ENGL 102	Writing and Rhetoric II	3
MATH 170	Calculus I	4
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
Hours		15
Fall Term 2		
CHEM 111	General Chemistry I	3
CHEM 111L	General Chemistry I Laboratory	1
MATH 175	Calculus II	4
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
Social and Behavioral Ways of Knowing Course		3
Hours		15
Spring Term 2		
CHEM 112	General Chemistry II	4
CHEM 112L	General Chemistry II Laboratory	1
MATH 275	Calculus III	3
PHYS 213	Engineering Physics III	3
PHYS 305	Modern Physics	3
Hours		14

Fall Term 3		
MATH 310	Ordinary Differential Equations	3
PHYS 321	Analytical Mechanics	3
PHYS 341	Electromagnetic Fields I	3
PHYS 371	Mathematical Physics	3
American Diversity Course		3
Hours		15
Spring Term 3		
MATH 330	Linear Algebra	3
PHYS 351	Introductory Quantum Mechanics I	3
300-level Subject Elective, Major Elective Course		3
300-level Subject Elective, Major Elective Course		3
International Course		3
Hours		15
Fall Term 4		
PHYS 400	Seminar	1
PHYS 490	Research	3
300-level Subject Elective, Major Elective Course		3
300-level Subject Elective, Major Elective Course		3
400-level Subject Elective, Major Elective Course		3
Social and Behavioral Ways of Knowing Course		3
Hours		16
Spring Term 4		
PHYS 400	Seminar	1
PHYS 411	Advanced Physics Lab	4
PHYS 492	Senior Research	1
300-level Subject Elective, Major Elective Course		3
400-level Subject Elective, Major Elective Course		3
400-level Subject Elective, Major Elective Course		3
Hours		15
Total Hours		122

The degree map is a guide for the timely completion of your curricular requirements. Your academic advisor or department may be contacted for assistance in interpreting this map. This map is not reflective of your academic history or transcript and it is not official notification of completion of degree or certificate requirements. Please contact the Registrar's Office regarding your official degree/certificate completion status.

General Emphasis

1. Students are thoroughly trained in the various sub-disciplines of physics. They have mastered the principles of mechanics, quantum mechanics, electromagnetic fields, thermal statics, and some advanced topics in physics, such as astrophysics and computational physics.
2. Students can communicate effectively, both orally and in writing, their scientific observations and their interpretations of physical laws.
3. Students are intellectually prepared to partake in physics research in a meaningful way.

Applied Emphasis

1. Students are trained in the various sub-disciplines of physics relevant to their interests and have explored advanced topics in physics and engineering.
2. Students can communicate effectively, both orally and in writing, their scientific observations and their interpretations of physical laws.
3. Students are intellectually prepared to participate in applied physics research in a meaningful way.

Physics (M.S.)

Master of Science. Major in Physics. (Non-thesis Option)

General M.S. non-thesis requirements apply.

The requirement is a minimum of 30 credits in coursework and the credits must be distributed as follows:

Code	Title	Hours
Physics Courses Numbered 500 and higher ¹		20
Courses Numbered 400 and higher ²		10
Required Courses ³		
PHYS 521	Advanced Mechanics	
PHYS 533	Statistical Mechanics	
PHYS 541	Electromagnetic Theory I	
PHYS 542	Electromagnetic TheoryII	
PHYS 550	Quantum Mechanics I	
Total Hours		30

Courses to total 30 credits for this degree

1

Include 2 credits for PHYS 501 Seminar and no more than three credits from PHYS 599 Research.

2

These may be non-physics courses upon the approval of the Physics Department's Academic Standards Committee.

3

Included in the 30 minimum credits.

Students must pass a comprehensive examination, which must be taken at the first offering after the student has completed the core courses required for the M.S. degree. Full-time students may not delay the completion of their core course requirements by avoiding the taking of a core course when offered except with the prior written consent of the Academic Standards Committee and the student's major professor. The examination is written and covers all of general graduate-level physics as defined by the required courses for the M.S. degree. Typically, it will be administered on two different days, with a time limit of approximately three hours for each day. The results of the examination will be evaluated by the physics faculty. If the comprehensive examination is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three nor more than 14 months following the first attempt.

Master of Science. Major in Physics. (Thesis Option)

General M.S. requirements for a degree with thesis apply. The student must complete a total of at least 30 credits at 400-level or higher, 20 of which must be at the graduate level, including a maximum of 10 credits in research and thesis, with no more than three of these credits from PHYS 599. Specific departmental graduate course requirements are 2 credits in PHYS 501 and PHYS 521, PHYS 541, PHYS 542 and PHYS 550. If a student's undergraduate preparation is considered deficient (e.g., it lacks laboratory experience at the upper-division level), then certain undergraduate courses will be required in the study plan. Such remedial credits are not

to be counted towards the total required for the degree. No departmental comprehensive exam is required.

A final defense of the M.S. thesis is scheduled upon completion of the thesis. The candidate is required to defend their work and show a satisfactory knowledge of the field in which the thesis research has been performed. The defense is oral and would typically last for one hour. The exam has to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

A typical study plan would include 40 to 50 credits of coursework at the 500-level in physics and about 30 credits in research and thesis. The study plan also would include at least six units of upper-division or graduate coursework outside of physics. The nature and number of these additional units will depend upon the professional goals of the individual student. In planning a program, the student should consult with the departmental Academic Standards Committee for approval of any particular choice of non-physics course work. The Ph.D. degree in physics is primarily a recognition of ability and accomplishment in research. The purpose of the coursework is to provide the factual and theoretical background for research. Successful completion of coursework is not in itself considered as completion of the major requirement for the degree.

All Ph.D. graduate students are required to enroll in Seminar each semester while in residence.

No formal foreign language requirement exists for Ph.D. candidates; however, in individual cases, depending on the research topic, a reading knowledge in one foreign language may be required by the thesis advisor.

A two-part preliminary examination is required. Part I is taken after the student has completed the courses required for the Ph.D. degree. Full-time students must take this exam no later than 2 years after entering the Ph.D. program. Students who have earned a master's degree in physics or wish to transfer credits to satisfy any of the departmental requirements (PHYS 521, PHYS 533, PHYS 541, PHYS 542, PHYS 550, PHYS 551, PHYS 571) may be required by the Academic Standards Committee to take the exam earlier. The examination is written and covers all of general graduate-level physics as defined by the required courses for a Ph.D. degree. Typically, it will be administered on two different days, with a time limit of approximately five hours for each day. The results of the examination will be evaluated by the physics faculty. If the preliminary examination, Part I, is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months nor more than 14 months following the first attempt.

Part II of the preliminary examination is set by the major professor of the Ph.D. student for a date within the second semester after Part I has been passed. The student is required to explain the goals of their planned Ph.D. research to the thesis committee and show general familiarity with the fields relevant for the research. Part II is oral and typically lasts for one hour. The exam is to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. The student's committee certifies to the Graduate College the results of the preliminary examinations. Upon passing, the student is advanced to candidacy for the Ph.D. degree. If Part II is failed, it may be repeated only once; the repeat examination

must be taken within a period of not less than three months nor more than one year following the first attempt.

A final defense of the Ph.D. thesis is scheduled upon completion of the dissertation. The candidate is required to defend their work and show a superior knowledge of the field in which the thesis research has been performed. The defense is oral and typically lasts for one hour. The exam is to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

1. Students are able to present their research in a clear and organized fashion at conferences and colloquia.
2. Students acquire the ability to partake in the conception and execution of a meaningful research project.
3. Students acquire advanced knowledge through upper-level course work and the completion of a meaningful research project (thesis option).

Physics (Ph.D.)

Doctor of Philosophy. Major in Physics.

General Ph.D. requirements apply. Correspondence concerning the student's specific goals is encouraged in the preliminary planning of the Ph.D. program.

Specific departmental course requirements are:

Code	Title	Hours
PHYS 501	Seminar (Must enroll each semester)	2
PHYS 521	Advanced Mechanics	3
PHYS 533	Statistical Mechanics	3
PHYS 541	Electromagnetic Theory I	3
PHYS 542	Electromagnetic TheoryII	3
PHYS 550	Quantum Mechanics I	3
PHYS 551	Quantum Mechanics II	3
PHYS 571	Mathematical Methods of Physics	3
At least nine additional semester-hours of Physics courses at the 500 level ¹		9
Total Hours		32

¹

At Least Nine Additional Semester-Hours of Physics Courses at the 500-level. Can include at most three credits of PHYS 599 Research.

A typical study plan would include 40 to 50 credits of course work at the 500-level in physics and about 30 credits in research and thesis. The study plan also would include at least six units of upper-division or graduate coursework outside of physics. The nature and number of these additional units will depend upon the professional goals of the individual student. In planning a program, the student should consult with the departmental Academic Standards Committee for approval of any particular choice of non-physics coursework. The Ph.D. degree in physics is primarily a recognition of ability and accomplishment in research. The purpose of the coursework is to provide the factual and theoretical

background for research. Successful completion of coursework is not in itself considered as completion of the major requirement for the degree.

All Ph.D. graduate students are required to enroll in PHYS 501 each semester while in residence.

No formal foreign language requirement exists for Ph.D. candidates; however, in individual cases, depending on the research topic, a reading knowledge in one foreign language may be required by the thesis advisor.

A two-Part preliminary examination is required. Part I is taken after the student has completed the courses required for the Ph.D. degree. Full-time students must take this exam no later than 2 years after entering the Ph.D. program. Students who have earned a masters degree in physics or wish to transfer credits to satisfy any of the departmental requirements (PHYS 521, PHYS 533, PHYS 541, PHYS 542, PHYS 550, PHYS 551, or MATH 571) may be required by the Academic Standards Committee to take the exam earlier. The examination is written and covers all of general graduate-level physics as defined by the required courses for a Ph.D. degree. Typically, it will be administered on two different days, with a time limit of approximately five hours for each day. The results of the examination will be evaluated by the physics faculty. If the preliminary examination, Part I, is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months nor more than 14 months following the first attempt.

Part II of the preliminary examination is set by the major professor of the Ph.D. student for a date within the second semester after Part I has been passed. The student is required to explain the goals of their planned Ph.D. research to the thesis committee and show a general familiarity with the fields relevant for the research. Part II is oral and typically lasts for one hour. The exam is to be announced to the Physics faculty at least one week in advance. All members of the Physics faculty are permitted to attend and ask questions. The student's committee certifies to the Graduate College the results of the preliminary examinations. Upon passing, the student is advanced to candidacy for the Ph.D. degree. If Part II is failed, it may be repeated only once; the repeat examination must be taken within a period of not less than three months nor more than one year following the first attempt.

A final defense of the Ph.D. thesis is scheduled upon completion of the dissertation. The candidate is required to defend their work and show a superior knowledge of the field in which the thesis research has been performed. The defense is oral and typically lasts for one hour. The exam is to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

1. Students can compete on the national and international level. This means that they have the knowledge and tools to present their work, as well as develop new ideas independent of their advisor. They should be able to articulate their work in written and oral forms, as well as defend their research protocols, data analysis, and conclusions.
2. Students gain a broad and comprehensive knowledge of physics, and in-depth knowledge of a specific discipline, such as astronomy, biophysics, computational physics, nuclear physics theory, or condensed matter physics.

3. Students communicate scientific principles, including own results, to knowledgeable, but not necessarily expert, audience.

Physics Minor

Code	Title	Hours
PHYS 211	Engineering Physics I	3
PHYS 211L	Laboratory Physics I	1
PHYS 212	Engineering Physics II	3
PHYS 212L	Laboratory Physics II	1
PHYS 213	Engineering Physics III	3
or ENGR 210	Engineering Statics	
Select 9 credits of Physics electives numbered 300 or above: ¹		9
Total Hours		20

Courses to total 20 credits for this minor

¹

The usual prerequisites are MATH 170 Calculus I, MATH 175 Calculus II, and MATH 275 Calculus III.

Pre-Health Professions Studies

Mark J. Nielsen, Associate Dean (321 Mines

Bldg; 208-885-6195, www.uidaho.edu/sci (<http://www.uidaho.edu/sci/>); science@uidaho.edu)

The minor in Pre-Health Professions Studies is administered by the College of Science (p. 442).

Minors

- Pre-Health Professions Studies Minor (p. 498)

Pre-Health Professions Studies Minor

Most health professions schools do not require a specific degree for admission. Instead, students are encouraged to select a major in an area that reflects their interests and aptitude, and then simultaneously complete prerequisite coursework for admission to their school(s) of choice. The Pre-Health Professions minor includes coursework that most health professions schools will expect applicants to have completed prior to admission. Requirements do vary between programs; therefore, students should be certain to check specific requirements at their schools of most interest.

Code	Title	Hours
PSYC 101	Introduction to Psychology	3
STAT 251	Statistical Methods	3
or STAT 301	Probability and Statistics	
Select one of the following sequences:		4
CHEM 101 & 101L	Introduction to Chemistry and Introduction to Chemistry Laboratory	
CHEM 111 & 111L	General Chemistry I and General Chemistry I Laboratory ¹	
Select at least 10 credits from the following:		10
BIOL 114	Organisms and Environments	

BIOL 115 & 115L	Cells and the Evolution of Life and Cells and the Evolution of Life Laboratory
BIOL 227	Anatomy and Physiology I
BIOL 228	Anatomy and Physiology II
CHEM 112 & 112L	General Chemistry II and General Chemistry II Laboratory
CHEM 277	Organic Chemistry I
CHEM 278	Organic Chemistry I: Lab
ENGL 317	Technical Writing II
PHYS 111 & 111L	General Physics I and General Physics I Lab ²
PHYS 211 & 211L	Engineering Physics I and Laboratory Physics I ²

Total Hours 20

Courses to total 20 credits for this minor

1

CHEM 111: Strongly encouraged as most health professions schools require general chemistry for science majors.

2

PHYS 111/PHYS 111L, PHYS 211/PHYS 211L: May be used towards the completion of this minor.

Continuing Education

The University of Idaho offers a variety of courses for individuals to continue their education, whether in Moscow or not. Continuing education courses fall into three categories:

1. Conferences, courses, seminars, or workshops offered by academic departments;
2. Credit and non-credit courses offered by the Engineering Outreach Program (p. 499); and
3. Independent Study in Idaho (p. 500) courses.

Courses Offered by Academic Departments

Several academic departments offer conferences, courses, seminars, and workshops throughout the region where students can earn U of I credit or Continuing Education Units (CEU) (see regulation D-5 for information on CEUs). These conferences, courses, seminars, or workshops are taught by U of I faculty members or by qualified local instructors who are approved by the respective college in which the course is offered.

Students earning U of I credit for these conferences, courses, seminars, and workshops must be admitted by the U of I Admissions Office; students earning credit through Independent Study in Idaho or CEUs do not.

Each college and department is responsible for developing and administering these courses as well as registering students. Those interested in taking such courses should contact the respective college for courses available in their geographic area.

Cooperative Programs

The university participates in a number of cooperative arrangements in the state and region to extend resources and take advantage of special facilities.

Associated Western Universities Program

The university is a member of Associated Western Universities, which is a cooperative venture of certain institutions to make use of national laboratories located in the west. Financial support is available from the U.S. Department of Energy for graduate students and faculty to spend periods of time, up to one year, pursuing research projects at a number of these laboratories.

Cooperative Programs with Other Universities

Located only eight miles apart, the University of Idaho and **Washington State University**, in order to take advantage of unique strengths of each institution, have for some time operated a cooperative graduate and undergraduate course program. Courses available on either campus are identified in departmental listings, and offerings are listed in the *Class Schedule*. In addition, the two schools cooperate in programs in medicine, veterinary medicine, and food science and technology.

In 2002, the University of Idaho, in cooperation with **Lewis Clark State College**, located in Lewiston, Idaho, began offering cooperative courses in Nez Perce language. Courses available on either campus are identified in departmental listings, and offerings are listed in the *Class Schedule*.

Engineering Outreach Program

875 Perimeter Dr MS 1014, Moscow ID 83844-1014; phone 208-885-6373; eo.uidaho.edu (<http://eo.uidaho.edu/>); eo-support@uidaho.edu (outreach@uidaho.edu)

The Engineering Outreach (EO) program began in 1975 to meet the educational needs of Idaho's just-developing high-tech industry. EO's first courses were delivered on videotape to regional corporations and educational centers.

Today, EO delivers courses online in engineering and various academic disciplines to students worldwide each semester. In-class sessions are recorded in high definition and encoded in a high-resolution MP4 format. Sessions are viewed online by students through a secure web portal. Engineering Outreach study options include master's degrees, academic certificates, non-degree coursework for transfer credit, background study, and professional education. EO also delivers a variety of undergraduate courses; however, students cannot earn an entire undergraduate degree at a distance.

Master's Degree Programs

Engineering Outreach delivers courses, on behalf of departments, for the master's degrees listed below. All required coursework may be completed at a distance. Proctors are required for completing exams; see EO website for more information.

- Civil Engineering (M.Engr.) (p. 258)
- Computer Engineering (M.S., M.Engr.) (p. 272)
- Computer Science (M.S.) (p. 263)
- Electrical Engineering (M.S., M.Engr.) (p. 277)

- Engineering Management (M.Engr.) (p. 287)
- Geological Engineering (M.S.) (p. 259)
- Mechanical Engineering (M.Engr.) (p. 284)
- Statistical Science (M.S.) (p. 489)
- Teaching Mathematics (M.A.T.) (p. 488)
- Technology Management (M.S.) (p. 292)

Academic Certificates

Academic certificates provide opportunities for professional advancement and build a strong foundation for future graduate study. EO course delivery is available for the following certificates:

- Power System Protection and Relaying (p. 279)
- Secure and Dependable Computing Systems (p. 268)
- Statistics (p. 491)

Academic regulations included in this catalog are applicable to all courses delivered by EO. For more information, see How EO Works (eo.uidaho.edu/how-eo-works) (<https://eo.uidaho.edu/how-eo-works/>).

Independent Study in Idaho

Barb Kirchmeier, Director (206 Blake House; 208-885-9258;
www.uidaho.edu/isi (<http://www.uidaho.edu/isi/>); indepst@uidaho.edu)

Independent Study in Idaho (ISI) was created in 1973 by the Idaho State Board of Education as a cooperative of four accredited Idaho institutions led by the University of Idaho (U of I). Other cooperating members include Lewis-Clark State College (LCSC), Idaho State University (ISU) and Boise State University (BSU). The ISI office is located in Moscow, Idaho, on the U of I campus. Each member institution of the ISI cooperative is accredited by the Northwest Commission on Colleges and Universities (NWCCU), the region's accrediting agency. Although ISI does not offer degrees, credits earned upon course completion transfer to most colleges and universities.

ISI courses are sponsored by the cooperating institutions and are delivered online. A complete list of ISI courses, course syllabi, and ISI policies and procedures are available on the ISI website (<http://www.uidaho.edu/academic-affairs/independent-study/>). Students take ISI courses to begin college programs early, graduate on time, resolve on-campus scheduling conflicts, satisfy prerequisites, or pursue professional development and personal enrichment. Courses are not on a semester or quarter calendar, so students can begin anytime, work from anywhere, and take up to one calendar year to complete a course. Students can work at their own pace within limits set by the course instructor on the number of assignments that can be submitted per week. Plan on a minimum of three months to complete a course. Independent Study in Idaho courses are designed for students who work well independently with limited interaction with instructors.

Mission

Provide greater access to educational opportunities that engage a cross-section of ethnic, socioeconomic, traditional and non-traditional learners by offering flexible enrollment in quality courses with online delivery.

Idaho Teacher Librarian Endorsement (K-12)

The U of I-sponsored library science courses are only available through ISI. Coursework leading toward competency as defined by Idaho Standards for Teacher Librarians for the Idaho Teacher Librarian (K-12) endorsement includes collection development/materials selection, literature for children or young adults; organization of information (cataloging and classification); school library administration/management; library information technologies; information literacy; and reference and information services, and a qualifying score on the Idaho Praxis II test number 5311. Coursework for endorsement through ISI requires 21-semester credits, in addition to a three-credit practicum.

When the coursework, practicum, and the Praxis II Test 5311 are completed, and if students are completing an Idaho endorsement, they must contact the Certification Officer at Undergraduate Programs and Certification, College of Education, University of Idaho, 875 Perimeter Drive MS 3084, Moscow, ID 83844-3084 with their official transcripts to request institutional recommendation signature approval for completion of requirements. Because library science is not a teaching field, the teacher librarian must also qualify for a standard Idaho elementary or secondary teacher's certificate. These courses may be approved for endorsement in other states. Teachers outside the state of Idaho should check with their state's Department of Education to determine requirements and to obtain written confirmation that ISI credits are acceptable for their state's endorsement.

University of Idaho Library Science Teaching Minor

ISI's library science courses also meet the requirements for a 24 semester-hour credit teaching minor in library science from the U of I. For more information on obtaining a minor, contact the U of I College of Education (<https://www.uidaho.edu/ed/>).

Education Professionals (K-12)

ISI courses may be used toward renewing teaching credentials and for certification. Contact your state Department of Education to determine if ISI courses are applicable.

Course Delivery and Services

Online Course Delivery

ISI students receive a Registration Confirmation Email, which includes the student's Vandal number and information on how to activate Vandal Accounts to access ISI courses online. ISI courses are delivered online through the BbLearn (Blackboard Learn) learning management system.

VandalMail

A VandalMail email account will be assigned upon registration. All ISI students are required to activate and use their VandalMail email account for ISI course-related correspondence or set up email forwarding from VandalMail to another email.

Exams and Proctors

Most ISI courses require completion of a specific number of proctored exams, which are delivered in hard copy format. Students are responsible for finding an acceptable proctor. View complete information concerning proctors and submit a Proctor Information Form (<http://www.uidaho.edu/academic-affairs/independent-study/forms/>).

Disability Support Services

To request disability-related services, visit the course sponsoring institution's website. Refer to Cooperating Institutions (<http://www.uidaho.edu/academics/dee/independent-study/cooperating-institutions/>).

Library Services

University of Idaho library resources are available to ISI students, including electronic journal databases and eBook collections. ISI students who are Idaho residents and non-residents who live within a 50-mile radius of the U of I may visit the library to obtain a guest card. All ISI students may contact their local library for information about borrowing materials through interlibrary loan. For more information, see Library Resources (<http://www.uidaho.edu/academic-affairs/independent-study/students/library-resources/>).

Registration and Fees

Registration

Students can register for ISI courses anytime without applying for admission to any of the cooperating schools. Admission to these institutions is not granted upon registering for an ISI course. ISI does not offer degrees; however, credits earned transfer to most colleges and universities. The University of Idaho DOES NOT calculate ISI course credits or transfer credits into the institutional GPA. It is recommended that students at other institutions obtain signature confirmation that ISI credits will be accepted from their academic department and contact their registrar to find out if ISI course grades will be calculated into the GPAs.

Fees

Idaho residency is not required. Non-residents pay the same fees as residents. Fees include registration and online course access, but they do not include textbooks and other course materials. Refer to the ISI website (<http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/course-fees/>) for current fee information.

Purchasing Course Materials

A list of required course materials is provided on the VandalStore website (<http://www.vandalstore.com/>) and in the syllabus for each course on the ISI website (<http://www.uidaho.edu/academic-affairs/independent-study/courses/find-a-course/>).

Financial Aid

ISI does not offer financial aid. Federal and state agencies, businesses, student financial aid services, and veterans' organizations may offer financial assistance to fund ISI course fees. ISI accepts most tuition assistance payments, such as Advanced Opportunities through Idaho public high schools. Students are advised to check with their financial aid office to determine if anything is available for ISI courses. Courses taken through ISI do not count toward a student's credit hour load and cannot be used to establish full-time or part-time student status to determine eligibility for financial aid or loan deferment.

Military Benefits

The Veterans Assistance Office at the U of I can help students apply for education benefits. Contact the U of I Veterans Assistance Office (<http://www.uidaho.edu/current-students/veterans-assistance/>) before enrolling.

Drops and Refunds

To drop an ISI course, submit the Drop Course Form (<http://www.uidaho.edu/academic-affairs/independent-study/forms/>). A dropped course without a final grade will not appear on a student's academic record or transcript.

Refund Schedule

Courses dropped within 45 days of registration may qualify for a refund. See ISI Refund Schedule (<http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/refund-schedule/>) for details.

Exchanging Courses

A course may be exchanged for another within 45 days of registration. For details, see Course Exchange (<http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/exchanging-a-course/>).

Course Extensions

A one-time, four-month course extension may be purchased for most courses. See Course Extensions (<http://www.uidaho.edu/academic-affairs/independent-study/registration-and-fees/course-extensions/>) for details.

Grades and Transcripts

Official transcripts can be purchased from the credit-granting institution (<http://www.uidaho.edu/academic-affairs/independent-study/cooperating-institutions/>). To determine the credit-granting institution, refer to your course or note the abbreviation listed in the course syllabus on the ISI website. ISI does not issue transcripts.

Interuniversity Program in Public Administration

Graham Hubbs, Chair, Department of Political Science (205 Admin Bldg; 208-885-6328)

The University of Idaho, with Idaho State University and Boise State University, offers a cooperative graduate program leading to the M.P.A. degree to provide present and prospective public administrators with a professional education and to prepare them to understand and adjust to a changing and challenging environment. Courses in core areas and in optional areas of emphasis, such as general public administration, natural resources administration, public works administration, and public finance, management, and budgeting, may be taken at any of the participating institutions without restriction. For further information, consult the Department of Political Science and Public Affairs Research.

Medical Education (WWAMI Program)

Dr. Jeff Seegmiller, Director, WWAMI (Washington, Wyoming, Alaska, Montana, Idaho) Medical Education Program (SHB 311, 83844-4207; phone 208-885-0355; e-mail: jeffreys@uidaho.edu).

WWAMI is a cooperative medical education program between the University of Washington School of Medicine (UWSOM) and the five-state WWAMI region (Washington, Wyoming, Alaska, Montana, Idaho). WWAMI has the mission and goal of increasing the training and education of medical students in their home states or neighboring northwest states, with the intent of exposing them to the unique needs and opportunities for medical careers in the region. Students complete their foundations phase of medical training in Moscow, Idaho and their Clerkships in Idaho

and at University of Washington's Seattle campus and partner health care facilities.

With small class sizes and individual clinical placements, Idaho WWAMI students have the opportunity to interact closely with the faculty and physicians. The WWAMI program allows access to medical education for Idaho residents by contract between Idaho and the UWSOM. Currently, 40 first-year students are admitted annually with a total class size of 160 for the four years of medical studies. The WWAMI program was developed in Idaho to train Idaho residents in medical studies, to address the need for more primary care physicians practicing in rural areas, to extend the resources and facilities of an excellent medical school into Idaho, to improve the quality of patient care, and to minimize the cost of medical education by the use of existing facilities.

Eligibility for consideration as a WWAMI medical student requires certification as an Idaho resident. UI's Undergraduate Admissions Office is responsible for residency certification.

Students interested in WWAMI apply directly to UWSOM. Idaho residents take their foundations phase years of medical studies at UI. All participating WWAMI faculty at UI hold affiliate faculty appointments at the University of Washington and in many cases develop and lead the curriculum for all five states.

Many of the physicians in the Moscow-Pullman-Lewiston area are involved in the preceptorship program in which the students work a half a day each week with local physicians and observe/participate in their practice, either in the office or at the hospital.

Participants in the WWAMI program are matriculated students of the University of Washington Medical School. Upon completion of their studies, they receive the M.D. degree. Following graduation, a postgraduate (internship/residency) training period of three to five years is required for medical practice. Medical students may also be approved for graduate studies at the University of Idaho or UWSOM leading to the M.S. or Ph.D. degree. The UWSOM M.D.-Ph.D. program usually requires a minimum of six years of study.

Medical Education Undergraduate and Graduate Course Work

A limited number of undergraduate and graduate course opportunities are available through the MEDS program. These courses are currently arranged with individual faculty.

Veterinary Medical Education (WIMU)

The University of Idaho cooperates with Washington State University in a program of veterinary medical education, research, and service. When accepted in the WI program, students from Idaho take the first three years and most of their fourth year of professional training in veterinary medicine at Washington State University. In the fourth year of the program, students also receive part of their training at the UI Caine Veterinary Teaching Center at Caldwell, Idaho, where they can specialize in food animal production medicine. Cooperative graduate programs leading to M.S. and Ph.D. degrees are also available. Idaho students seeking to enter the professional program must complete a Washington State University Uniform Undergraduate Application Form as well as a WI Program application. Both may be obtained from and returned to the Office of Student Services, College of Veterinary Medicine, Washington State University, Pullman, Washington 99164-7012. In addition, Idaho applicants must secure certification of Idaho residency status by completing and submitting the appropriate residency certification forms

available through the University of Idaho Undergraduate Admissions Office.

ROTC

- Aerospace Studies (p. 502)
- Department of Military Science (p. 503)
- Department of Naval Science (p. 504)

Aerospace Studies

Lieutenant Colonel Nickolas Jeffers, Dept. Head (Washington State University, Kruegel Hall, phone 509-335-5598; www.afrotc.wsu.edu (<http://www.afrotc.wsu.edu/>)).

The Air Force Reserve Officer Training Corps (AFROTC) offers eligible students education and training that leads to a commission as a second lieutenant in the U.S. Air Force or U.S. Space Force. Air Force ROTC students may major in any degree program offered at UI; they supplement their major curricula with the specialized aerospace studies courses to prepare for active commissioned service.

Four-Year Program (General Military Course and Professional Officer Course)

A formal application is not required for students entering the four-year program. They may register for the program at the same time and in the same manner as they enroll in their other college courses. During their freshman and sophomore years, students enroll in the General Military Course (GMC), and there is NO MILITARY OBLIGATION. At the end of their sophomore year, they may compete for entry into the Professional Officer Course (POC), which is normally taken during the last two years of college. Selection into the POC is highly competitive and is based on qualification on an Air Force medical examination, cumulative grade point average, a physical fitness test, the recommendation of the professor of aerospace studies, scores achieved on the Air Force Officer Qualifying Test (AFOQT), and successful completion of a two-week field training course at an Air Force base.

Air Force ROTC also offers financial assistance to selected students in the form of scholarships and subsistence allowances. The students compete for the scholarships through a national screening process. The Air Force offers 1- to 4-year scholarships that cover tuition, fees, and a book allowance, and also provide a stipend allowance (\$300-\$500 per month, depending on their level in the program) for each school year a student is on scholarship. Students interested in applying for scholarships should get in touch with this department. Non-scholarship students still receive a stipend allowance (\$450-\$500 per month) while in the POC.

The Air Force places a strong emphasis on physical fitness, and all ROTC cadets are required to participate at least three times a week in an organized, early morning fitness program with other cadets as part of the Leadership Laboratory requirements.

Field Training

Air Force ROTC field training is offered during the summer months at Maxwell Air Force Base, Alabama. Students in the four-year program participate in two weeks of field training, usually between their sophomore and junior years. Field Training is a mandatory program for all individuals qualified to pursue an Air Force or Space Force commission through AFROTC. The program is designed to evaluate military leadership

and discipline, determine potential for entry into the POC, and stratify cadets among peers.

Leadership Laboratory

Leadership Laboratory is taken an average of two hours a week throughout the student's enrollment in Air Force ROTC. Instruction is conducted within the framework of an organized cadet wing with a progression of experiences designed to develop each student's leadership potential. Leadership Laboratory involves a study of Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force and Space Force, and the life and work of an Air Force or Space Force junior officer. Students develop their leadership potential in a practical, supervised laboratory. Additional opportunities include field trips to Air Force installations to gain familiarity with the operational Air Force. In addition, students are required to participate at least three times a week in an organized, early morning fitness program with other cadets.

Aerospace Studies Programs (p. 503)

Minors

- Aerospace Studies (p. 503)

Aerospace Studies Minor

Code	Title	Hours
Select courses from the following: ¹		20
AERO 101	USAF Heritage and Values I	
AERO 102	USAF Heritage and Values II	
AERO 201	USAF Team and Leadership Fundamentals I	
AERO 202	USAF Team and Leadership Fundamentals II	
AERO 311	USAF Leading People and Effective Communication I	
AERO 312	USAF Leading People and Effective Communication II	
AERO 313	Leadership Laboratory III	
AERO 411	USAF National Security, Leadership, and Commissioning Preparation I	
AERO 412	USAF National Security, Leadership, and Commissioning Preparation II	
AERO 413	Leadership Laboratory IV	
Total Hours		20

¹

At least 12 credits must be in courses numbered 300 and above.

Courses to total 20 credits for this minor

Aerospace Studies Programs

The following programs are designed to provide students with a good military and leadership foundation so that students completing them can serve as effective Air Force officers. They are not designed to be academic majors and thus no bachelor's degree is offered.

For a student to receive an Air Force commission, they must have completed either the Four-Year Program or the Two-Year Program. Students may enter the program at points other than the two and four year points; however, this requires a specialized academic program and department head approval. Contact the department head for more

information. Prior-service students should consult the department to find out what course of study will be required for them.

Four-Year Program

Code	Title	Hours
AERO 101	USAF Heritage and Values I	1
AERO 102	USAF Heritage and Values II	1
AERO 103	Leadership Laboratory I	2
AERO 201	USAF Team and Leadership Fundamentals I	1
AERO 202	USAF Team and Leadership Fundamentals II	1
AERO 205	Leadership Laboratory II	2
AERO 311	USAF Leading People and Effective Communication I	3
AERO 312	USAF Leading People and Effective Communication II	3
AERO 313	Leadership Laboratory III	2
AERO 411	USAF National Security, Leadership, and Commissioning Preparation I	3
AERO 412	USAF National Security, Leadership, and Commissioning Preparation II	3
AERO 413	Leadership Laboratory IV	2
Total Hours		24

Department of Military Science

LTC Thomas Warren, Dept. Head (West End, Mem. Gym. 83844-2424; phone 208-885-6528; armyrotc@uidaho.edu).

Military Science (Army ROTC) lecture classes are open to all students, including those not interested in pursuing a commission as an Army officer. Students who are interested in exploring a potential commission are strongly encouraged to participate in labs and the organized physical training sessions.

The primary objective of the program is to develop leadership and management skills in students. Supplementary objectives include enhancement of the student's abilities in speaking and writing, situational assessment, goal setting, and problem solving. The Department cultivates within its students a strong sense of personal integrity, self-discipline, and responsibility.

For those interested in or actually pursuing an Army commission, all levels of course work combine classroom instruction with practical exercises. The two-year basic course (100 and 200 level classes) consists of a one-credit lecture course each freshman semester and a two-credit lecture course each sophomore semester. For most students, these classes are taken simultaneously with no-credit lab courses. The curriculum covers confidence building exercises, map reading, leadership, management principles, first aid, and other life skills with broad applications beyond the military. Students in labs participate in several activities, including drill and ceremonies, rappelling and rifle marksmanship.

Other than scholarship students, no military commitment is required of students in the first two years of the program. These students survey Army opportunities and decide whether to continue in the program as advanced course students who will commission as Army officers. Students who have made a contractual commitment to seek a commission receive monthly stipends ranging from \$300 to \$500

depending on status. Scholarships from two to four years are available to some students.

The advanced course consists of three-credit lecture and no-credit lab courses normally taken each semester during the last two years of university study. The program also includes a four-week advanced camp at Fort Knox, Kentucky (normally after the junior year). Study centers on leadership styles and techniques with special emphasis placed on small unit leadership.

Army ROTC is the major source of commissioned officers for the U.S. Army. After successfully completing the program and baccalaureate degree requirements in almost any field, the student receives a commission as a second lieutenant. Active duty is not a requirement but is something for which students compete. Graduates also choose from among 26 different Army branches or specialties. Those not choosing active duty serve with the Army Reserves or Army National Guard on a part-time basis.

Prior to commissioning, all cadets must demonstrate proficiency in communications and military history. This may be achieved through taking UI course offerings in those subject areas. See your Army ROTC class advisor for a list of approved courses.

Departmental members will answer questions about specific programs and courses. Contact the department by going to the west end of Memorial Gymnasium, by calling 208-885-6528 or 1-88-88-UIDAHO, or by e-mailing at armyrotc@uidaho.edu. Further information is available on the web at www.armyrotc.uidaho.edu (<http://www.armyrotc.uidaho.edu/>).

Minors

- Military Science Minor (p. 504)

Military Science Minor

Code	Title	Hours
MS 301	Adaptive Team Leadership	3
MS 302	Applied Team Leadership	3
MS 401	Mission Command and the Army Profession	3
MS 402	Mission Command and the Company Grade Officer	3
Select 3 credits of Military Science courses		3
Select one Military History Course ¹		3
Total Hours		18

Courses to total 18 credits for this minor

1

Selected in consultation with the Professor of Military Science, this course should develop the student's awareness of the relationship of the military establishment to society, particularly in the United States, and develop their interest in the evolution of war and the progression of military professionalism.

Department of Naval Science

CAPT Price Lockard, Commanding Officer, Naval Science (Hayes Hall, University of Idaho; phone 208-885-6333; www.uidaho.edu/navy-rotc (<http://www.uidaho.edu/navy-rotc/>))

The Navy-Marine Corps Officer Education Program is administered and taught by the Naval Science Department Staff on the University of Idaho,

Moscow campus. The Program's objective is to provide instruction and training to students in preparation for being commissioned as officers in the United States Navy or Marine Corps through the Naval Reserve Officers Training Corps (NROTC). Students are designated as midshipmen and receive extensive academic, physical, and leadership training while pursuing a degree. The Program is open to men and women and offers scholarships leading to active duty commissions. Normally, students enter the program at the beginning of their freshman year; however, selected students may enter up to the beginning of their sophomore year and in very limited cases the beginning of their junior year. Students take up to 25 hours of professional development courses taught by the NROTC Unit and must participate in Introduction to Naval Science Labs each semester. All Naval Science courses and the lab are conducted at the University of Idaho. Students attending Washington State University are able to participate in the Program and can register for these courses via the UI/WSU Cooperative Courses program. In addition to the required Naval Science courses, all NROTC students must complete additional academic requirements as stipulated in their contract. For Navy Option students, Service Assignment is completed during their senior year and students may be assigned to duty on nuclear submarines, surface ships, naval aviation or special warfare. Service assignment for Marine Option students occurs following completion of The Basic School after graduation.

Scholarship Program

NROTC scholarship students' benefits include tuition, fees, a book allowance, and a monthly stipend. Room and board are not covered by the scholarship.

Application for this Program is normally made during the spring of the junior year or early fall of the student's senior year of high school. Initial selections for these National Four-Year Scholarships are completed by a Naval Service Training Command-sponsored board and are based on college entrance examination scores (SAT or ACT) and high school academic performance.

A student on scholarship will complete three summer training cruises of four to six weeks duration. During the first cruise, students are introduced to the submarine, amphibious warfare (Marine Week), surface warfare, and aviation communities. For Navy option students, the second and third cruises can be aboard nuclear submarines, surface ships, or with aviation units of the Pacific or Atlantic fleets and may include overseas travel. Marine Option students attend Officer Candidate School in Quantico, VA for their final summer training evolution. During summer training events, the students receive one-half of the pay of an Ensign/Second Lieutenant, plus room and board.

Graduates of this program are commissioned as officers in the Navy or Marine Corps.

College Program

College Program students receive uniforms and Naval Science textbooks at no cost but receive no other financial benefits.

Application for this program is normally made during the spring of the student's senior year of high school and in limited cases the end of their freshman year of college. Applications can be obtained from the Unit's website and should be sent directly to the Naval Science Department Head of the University of Idaho. Selections are based on college entrance examination scores (SAT or ACT) and high school/university academic

performance. Students can apply to either the Navy or Marine option programs.

College Program students may be nominated by the Professor of Naval Science for a three-year scholarship during their freshman year or a two-year scholarship or Advanced Standing during their sophomore year if their grades and military aptitude marks are sufficient to warrant such nomination. Students who are not selected for a scholarship or Advanced Standing by the end of their sophomore year are not allowed to continue in the Program. Students who are selected for a scholarship or Advanced Standing will conduct, at a minimum, one summer training evolution following their junior year. It is an afloat cruise (Navy Option) or attendance at Officer Candidate School (Marine Option) of the same type and with the same pay as described for the Scholarship Program. Graduates of this program are commissioned as officers in the Navy or Marine Corps.

UI Room and Board Scholarship

The University of Idaho established a \$5,000 room and board scholarship for all new incoming NROTC students selected for a 4-year national NROTC scholarship and those accepted as College Programmers. The scholarship can be renewed for up to 4 years per student, as long as the student is an active Midshipman, a full-time degree seeking undergraduate, and living in a University of Idaho residence hall. The award can be combined with other scholarships but cannot exceed the cost of attendance established by the Financial Aid Office and may be adjusted each year if scholarships or grants exceed the established cost of attendance. Funds cannot be used for tuition or book expenses. Work closely with your Financial Aid adviser to fully understand what your scholarship covers and any adjustments that may be made to your scholarships.

Field Trips

Field trips to Navy and Marine Corps facilities are arranged periodically in order to allow the Navy-Marine Corps Officer Education Program members the opportunity to learn more about the naval service.

Minor

- Naval Science Minor (p. 505)

Naval Science Minor

Code	Title	Hours
NS 303	Ship Systems I	3
NS 304	Ship Systems II	3
NS 104	Seapower and Maritime Affairs	3

Students must complete a minimum of four courses from the lists below to equal 12 credits:

Select two from the following:	6
NS 203	Workshop
NS 205	Navigation
NS 311	Evolution of Warfare
NS 403	Workshop
NS 402	Naval Leadership and Ethics
NS 412	Fundamentals of Maneuver Warfare

Select one from the following:	3
HIST 180	Introduction to East Asian History
HIST 438	Modern Mexico and the Americas

HIST 440	Social Revolution in Latin America
HIST 457	History of the Middle East
HIST 484	Modern China, 1840s to Present
HIST 485	Chinese Social and Cultural History
IS 325	The Contemporary Muslim World
IS 326	Africa Today
IS 370	African Community, Culture, and Music
POLS 420	Introduction to Asian Politics
Select one from the following:	3
AERO 411	USAF National Security, Leadership, and Commissioning Preparation I
AERO 412	USAF National Security, Leadership, and Commissioning Preparation II
HIST 430	U.S. Diplomatic History
POLS 338	American Foreign Policy
POLS 449	World Politics and War

Total Hours 21

Courses to total 21 credits for this minor

- Upon completing the minor in Naval Science, students will have gained a general introduction to the United States Navy and Marine Corps that emphasizes organizational structure, warfare components and assigned roles and missions.
- Students will be able to discuss the influence of sea power on history that incorporates both a historical and political science process to explore the major events, attitudes, personalities, and circumstances.
- The minor will introduce many of the fundamental concepts of leadership, management, ethics, nautical and land-based navigation, military theory, naval engineering and combat systems. Students will be able to apply critical thinking skills, professional writing and technical proficiency.

Summer Session

Summer Session is an integral part of the year-round instructional program at the University of Idaho. A fourteen-week summer session begins about the third week of May. The flexible summer schedule includes a session that begins the Monday following Commencement, a second session that starts in mid-June, and a late session that starts mid-July. Summer session ends the Friday prior to the start of fall semester. The summer schedule of classes is designed to provide students with the opportunity to complete their academic programs in a timely manner. Special and innovative programs are offered to meet the needs of in-service professionals and other clientele throughout the state and nation.

Academic regulations included in this catalog are applicable during the summer session. For more information, call 208-885-4074 or visit www.uidaho.edu/summer (<http://www.uidaho.edu/summer/>).

University Honors Program

Sandra Reineke, Director (315 Idaho Commons; phone 208-885-7702; www.uidaho.edu/honors (<http://www.uidaho.edu/honors/>))

Established in 1983, the University Honors Program (UHP) fosters academic excellence in undergraduate education by offering a

stimulating course of study and the advantages of an enriched learning community for students from all colleges and majors.

Our learning communities include honors courses taught by select professors that count towards students' degree work, honors residence halls for the 1st year as well as more advanced honors students, and honors co-curricular enrichment opportunities that promote faculty-student mentorship inside and outside the classroom such as a monthly mini-lecture series, annual excursions to honors regional conferences where students can present their research, scholarship, and creative activities including a student-managed magazine, an active honors student club, and free of charge access to cultural and social events on and off-campus.

Admission Process

Admission to the University Honors Program is selective. Applications can be submitted online year-round. In order to ensure timely enrollment in honors courses, applications should be submitted at least two weeks prior to the beginning of the fall and spring semesters.

First-year applicants from high school: Applicants must first be admitted to the University of Idaho before they may apply online via the web-based application portal. Applicants are asked to submit the following information and materials:

1. Last name, first name, permanent mailing address, and date of anticipated graduation from high school.
2. Unweighted cumulative high school GPA.(*)
3. One writing sample from one of their high school classes.
4. Two short essays based on three writing prompts to choose from.
5. SAT and/or ACT test scores are not required for review but can be submitted as part of the review process.

(*) First-year applicants without a high school GPA or those who are home schooled are asked to submit two letters of recommendation as part of their application materials.

First-year applicants are encouraged to apply by the University of Idaho priority date to be automatically considered for additional honors program-specific scholarships. However, applicants may apply anytime and will still be automatically considered for honors scholarships as they become available.

Current UI student applicants: Current students who have completed at least their first semester at the U of I and have achieved a minimum cumulative U of I GPA of 3.5 are considered for admission on a case-by-case basis. Current student applicants should follow the web-based application portal.

Transfer student applicants: Transfer students with a cumulative 3.5 GPA from their previous institution are considered for admission on a case-by-case basis. Transfer student applicants should follow the web-based application portal.

Both current and transfer student applicants must meet with a program staff member for an academic advisement session prior to completing their application to determine if the applicant has enough course credit hours remaining to fulfill the program requirements by the time they graduate.

Completion Requirements

A member in good standing of the University Honors Program must be registered at the UI and complete the following requirements:

- Complete at least 21 hours of honors coursework [1]
- Complete either the "Honors Thesis" or "Honors Portfolio" option totaling 4 honors credits
- Complete at least one "Engaged Learning Experience" from the approved list [2]
- Attend a new student orientation session in the fall semester
- Submit an internal program completion form prior to graduation
- Graduate with a cumulative UI GPA of 3.3

[1] Students may use no more than two "Honors Course Adjustment Contracts" for a total of six honors credits towards the 21-honors credit requirement.

[2] The list of approved "Engaged Learning Experiences" is on file with the University Honors Program and includes undergraduate research, scholarship, and creative activities, education abroad, internships, cooperatives, and leadership experiences.

Students completing these requirements earn an Honors Program Award of Completion upon graduation from the University of Idaho.

Scholarship Availability

Each year scholarships are offered to a select number of students in the program. No additional application form is required. Likewise, a select number of UHP Western Undergraduate Exchange (WUE) awards are offered to non-Idaho residents from WUE states. The awards are renewable, contingent on satisfactory progress toward program requirements while maintaining an overall institutional GPA of 3.3.

Learning Outcomes

University Honors Program expectations for learning outcomes are aligned with the University-Level Learning Outcomes. University level learning outcomes broadly describe expected and desired consequences of learning through integrated curricular and co-curricular experiences. They provide the university with a basis for ongoing assessment to continuously improve teaching and learning.

Students completing the University Honors Program will acquire and demonstrate the ability to:

1. Integrate information across disciplines using knowledge of theories and concepts in their disciplinary specialization.
2. Use multiple thinking strategies to examine real-world issues, solve problems, explore creative avenues of expression, or make consequential decisions through participation in academic and experiential educational avenues.
3. Speak and write clearly and effectively to communicate in ways that demonstrate respect and understanding in a complex society.
4. Engage in transformational experiences that foster an understanding of self, relationships, and diverse global perspectives through participation in experiential educational opportunities.
5. Apply principles of ethical leadership and service-oriented commitment to advance and sustain local and global communities.

University of Idaho Centers

Beginning with our beautiful residential campus in Moscow, the university's reach extends throughout Idaho, serving over 11,000 students with educational centers in Boise, Coeur d'Alene and Idaho Falls; nine Research and Extension centers; and Extension offices in 42 counties. One of the nation's land-grant research universities, U of I is a noted national leader in student-centered learning and interdisciplinary research that promotes public service. Our work serves businesses and communities, advancing the pursuit of diversity, citizenship and global outreach.

University of Idaho, Boise

Michael Satz, Associate Vice President and Executive Officer University of Idaho Boise and Southwest Region. 322 East Front Street, Suite 190, Boise, Idaho 83702; 208-334-2999; www.uidaho.edu/boise, (<http://www.uidaho.edu/boise/>)boise@uidaho.edu

Strategic Focus

As the state's only land-grant institution, the University of Idaho is responsible for engaging citizens, businesses, and institutions throughout the state.

The University of Idaho Boise (<http://www.uidaho.edu/boise/>) provides access to all University of Idaho resources to southwest Idaho. UI Boise is focused on community impact, regional economic development, and supporting university growth, as well as having an engaged university campus with a climate of inclusion for employees throughout its regions of responsibility.

Strategically located in Boise, the economic and governmental center of Idaho and home of more than 55 percent of the state's population and business entities, UI Boise supports teaching, learning, research and outreach. We distinguish ourselves through:

- Quality programs that accommodate working professionals and full-time students with a focus on professional and workforce development.
- Outreach to southwest Idaho's communities to foster their sustainability, growth and educational access.
- Proactive research for domestic and global solution.
- Collaborative and interdisciplinary work with the public and private sectors, including other institutions of higher education.
- Enduring relationships with alumni and friends to carry forward the proud history and traditions of the University of Idaho.

Location

The University of Idaho established a presence in Boise with the Ada County Extension program in 1910. Today, the primary home of the University of Idaho Boise is at the intersection of Front Street and Broadway Avenue in the Idaho Water Center building, with other locations throughout the downtown, such as the College of Law at the Idaho Law and Learning Center on Jefferson Street, the Integrated Design Lab on Front Street, and the Ada County Extension offices located on Glenwood Street.

UI Boise also has leadership and administrative responsibility for University of Idaho activity in south central Idaho, including the Magic Valley and Wood River Valley.

Academic Programs in the Boise Area

Consistent with the role and mission assigned by the State Board of Regents and the University of Idaho's land-grant designation, the University offers select master's, specialist's and doctorate degree programs in Boise. Additional professional programs, certificates, and courses are offered in response to needs of the community. Programs and courses are offered in many formats including traditional classroom, hybrid, and online. Students participate in degree and certificate programs in the following disciplines:

Agricultural & Life Sciences

- Agricultural Education: M.S.
- Food and Nutrition: Dietetics B.S. (Students will spend the junior year in the Moscow campus, and the senior year is based at UI Boise or UI Coeur d'Alene)
- Agricultural Science, Communication and Leadership: B.S. (2+2 at College of Western Idaho)

Art & Architecture ¹

- Architecture: M.Arch.
- Landscape Architecture: M.L.A.
- Bioregional Planning and Community Design: M.S.
- Bioregional Planning and Community Design: M.S / J.D.
- Bioregional Planning and Community Design: Certificate
- Integrated Architecture and Design: M.S.

¹

The College of Art and Architecture also offers coursework that satisfies the first 2 years of UI's Architecture, Landscape Architecture and Interior Design degree programs in Boise.

Education

- Adult & Organizational Learning and Leadership: M.S.
- Career and Technical Education: Certification
- Business & Marketing Education - Secondary
- Occupational Education - Secondary
- Curriculum & Instruction: M.Ed. & Ed.S. (Emphasis available in Career & Technical Education)
- Education: Ed.D., Ph.D.
- Educational Leadership: M.Ed., Ed.S.Ed.Ldrshp.
- Human Resource Development: Certificate
- Technical Workforce Training: Certificate
- Rehabilitation Counseling and Human Services: M.Ed.
- Special Education: M.Ed. and K-12 Certification Recommendation, Elementary or Secondary (Prereq: Certification in General Education)

Engineering

- Biological Engineering: M.S., M.Engr., Ph.D.
- Civil Engineering: M.S., M.Engr., Ph.D.
- Engineering Management: M.Engr.
- Mechanical Engineering: M.Engr., M.S., Ph.D.
- Technology Management: M.S.

Interdisciplinary Degrees

- Environmental Science: M.S.
- Natural Resources and Environmental Science: P.S.M.
- Water Resources: M.S., Ph.D.

Law

Idaho Law students may choose to attend either the Moscow or Boise location for their three-year education.

- Juris Doctor
- Concurrent degree J.D./M.S. in Accountancy, Taxation (offered in conjunction with the Boise State University College of Business and Economics)
- Concurrent degree J.D./M.B.A. (Master of Business Administration) (offered in conjunction with the Boise State University College of Business and Economics)

The Boise location also offers clinical experiences with the Family Justice Clinic, the Entrepreneurship Law Clinic, the Housing Clinic, and the Low Income Taxpayer Clinic. Students in clinics, under the direction of their licensed supervisor, represent clients in addressing their legal needs.

Letters, Arts and Social Sciences

CLASS offers a psychology undergraduate program in southwest Idaho in partnership with College of Western Idaho and College of Southern Idaho (see 2+2 Programs sections below). In addition, CLASS offers the following online programs:

- Criminology B.A, B.S
- General Studies, B.A, B.S
- History, B.A, B.S
- Psychology, B.S
- Psychology, M.S in Human Factors
- Public Administration, M.S.
- Organizational Science, B.A, B.S

Medicine

In partnership with the University of Washington School of Medicine, the Idaho WWAMI Clinical Education offices in Boise offer all required and elective clinical clerkships for 3rd and 4th year medical students throughout the State of Idaho.

Natural Resources

- Natural Resources: M.N.R.
- Fire Ecology and Management: M.N.R
- Fire Ecology, Management & Technology: graduate certificate
- Restoration Ecology: graduate certificate

2+2 Programs at CSI and CWI

Academic Programs in Twin Falls

The University of Idaho and College of Southern Idaho partnership allows students to complete UI courses at the UI Twin Falls Research & Extension Center on the CSI campus. Other degrees and programs are available through the University of Idaho's online programs.

- Agriculture Science, Communication & Leadership: B.S.Ag.L.S. (upper division offered in conjunction with CSI)
- Career and Technical Education: Certification
- Criminology B.A., B.S. (upper division offered in conjunction with CSI)
- Education (offered in conjunction with CSI)
- Emphasis in Engineering & Technology Education - Secondary
- Psychology (upper division offered in conjunction with CSI)

Academic Programs at the College of Western Idaho

With the 2+2 program, you can earn a University of Idaho degree at College of Western Idaho without leaving the Treasure Valley. This

program is designed for working professionals or individuals who are place-bound.

- B.S. in Agricultural Science, Communication and Leadership (upper division offered in conjunction with CWI)
- Criminology B.A., B.S. (upper division offered in conjunction with CWI)
- B.S. in Psychology (upper division offered in conjunction with CWI)

Online and Distance Education Degrees

There are several undergraduate and graduate degree programs that can be completed via online or distance education:

- Criminology B.A, B.S
- General Studies, B.A, B.S
- History, B.A, B.S
- Psychology, B.S
- Organizational Science, B.A, B.S
- Graduate degrees: Learn more about graduate degrees at the College of Graduate Studies (p. 292).

Research and Community Services in the Southern Region

The University of Idaho Boise increases access to continuing education for the local population and extends outreach programs statewide.

Additionally, as the state's land-grant institution, the University of Idaho has a statewide footprint. Extension educators are based in 42 of Idaho's 44 counties. Research and Extension centers are located throughout the state in service of Idaho's agricultural economy.

The University of Idaho Boise supports southwest Idaho researchers, educators, and Extension specialists in the disciplines of aquaculture, family economics, science education, early childhood education and family literacy, nutrition education, food safety and processing, and educational communications.

Research, Outreach, and Extension at UI Boise includes:

- 4-H Outreach to Military Kids
- 4-H Extension Robotics
- Center for Ecohydraulics Research
- Center on Disabilities and Human Development
- Confucius Institute
- Family & Consumer Sciences
- Food Technology Center
- Idaho Geological Survey
- Idaho Water Resources Research Institute (IWRRI)
- Integrated Design Lab
- James A. & Louise McClure Center for Public Policy Research
- Pesticide Safety Management
- Small Business Legal Clinic
- TechHelp
- TRiO
- Urban Design Center

Research, Outreach, and Extension in Southwest Idaho includes:

- Aquaculture Research Institute - Hagerman
- Kimberly Research and Extension Center
- McCall MOSS

- Parma - Southwest Idaho Research and Extension Center
- Twin Falls Research and Extension Center

University of Idaho, Coeur d'Alene

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The University of Idaho Coeur d'Alene was established to bring U-Idaho programs to the people of northern Idaho, eastern Washington, and western Montana. Cooperative relationships with other Idaho institutions, as well as those in eastern Washington, allow our students to finish various degrees without leaving the area. Undergraduate, graduate, and certificate programs are offered in Coeur d'Alene. Courses are taught on-site by resident and adjunct faculty or offered via videoconferencing and online. Many Coeur d'Alene programs are designed for working professionals seeking a college education or advanced degree.

Undergraduate Degrees

U-Idaho Coeur d'Alene offers a variety of degrees in person and online. These include several academic minors as well as undergraduate degrees in the following areas:

- Career and Technology Education
- Child, Family, and Consumer Studies: Child and Youth Development
- Computer Science
- Early Childhood Development and Education
- Elementary Education with K-8 credential (Certification in Elementary Education is available for those students who hold a bachelor's degree and seek a teaching certificate.)
- English: Literature Emphasis
- English: Professional Writing Emphasis
- Environmental Science: Physical Science Option 2
- Food & Nutrition: Nutrition Option
- General Studies
- Interdisciplinary Studies
- Organizational Sciences
- Psychology with Addictions

Graduate Degrees

U-Idaho Coeur d'Alene offers the following graduate degrees in person or online:

- Adult and Organizational Learning and Leadership
- Computer Science
- Curriculum and Instruction
- Educational Leadership
- Environmental Science – Water Science Emphasis
- Executive Master of Business Administration
- Master of Natural Resources
- Professional Science Master's in Natural Resources and Environmental Science
- Rehabilitation Counseling and Human Services
- Special Education
- Additional graduate coursework and degrees available through Engineering Outreach

Certificate Programs

U-Idaho Coeur d'Alene offers the following certificates in person or online:

- Environmental Contamination Assessment
- Environmental Water Science
- Fire Ecology
- Geographical Information Systems (GIS)
- Organizational Dynamics
- Restoration Ecology

Engagement with local citizens, businesses, and agencies in northern Idaho is a primary goal of the university. The role of the Center is to make university resources, expertise, and facilities available throughout the region. In addition to academic program offerings, the Center promotes business development with corporate research, programs in support of business start-ups, and continuing education opportunities for area professionals. A major Center initiative, Dign'IT, aims to develop cultural awareness of the importance of software engineering and computer science. This industry-driven initiative provides services and promotes training in these areas for people of all ages. The Center hosts local and regional research projects in water quality and environmental science via its Community Water Resource Center that also serves as an outreach center for local tribes, agencies, and advocacy groups. Laboratory facilities in the Center support diverse research activities.

The University of Idaho Coeur d'Alene has a strong history of serving the needs of local school districts through professional development programs and non-credit program offerings to support local public school administrators, teachers, and students. A current emphasis is to promote computer science training in public schools.

Scholarly and creative activity and research are components of all faculty programs in northern Idaho. University of Idaho Coeur d'Alene faculty have established research programs in key areas including nutrition, child development, literacy, science education, educational leadership, and addiction studies.

The University of Idaho Coeur d'Alene houses the North Idaho Regional Special Education Office in cooperation with the Idaho State Department of Education. The Regional Special Education Consultant provides local communities with technical assistance, in-service education, and monitoring support. The Office also includes the North Idaho Regional Special Education Library, a collection of materials designed to be a resource and support for Special Education Teachers, directors, parents, and other professionals. The Center also houses the regional Assistive Technology Lending Library providing technologies for citizens in the region that are in need.

The Extension Northern District Office is located at U-Idaho Coeur d'Alene and provides support for ten northern Idaho counties. Extension non-credit programs are offered at the local level in competitive agriculture, community development, nutrition and food safety, family and youth, and natural resources.

University of Idaho, Idaho Falls

Lee Ostrom, Center Executive Officer, (1776 Science Ctr. Dr., Suite 306, Idaho Falls, Idaho 83402; 208-757-5427 www.uidaho.edu/idaho-falls (<http://www.uidaho.edu/idahofalls/>)).

The University of Idaho, in partnership with Idaho State University, operates the Center for Higher Education at University Place in Idaho Falls. University Place serves over 3,000 undergraduate and graduate

students in eastern Idaho. The center is ideally located on the banks of the Snake River and adjacent to the Idaho National Laboratory (INL). Yellowstone and Teton National Parks, scenic forests, pristine wilderness areas, and world-class recreational activities are located nearby.

Academics

Consistent with the role and mission assigned by the State Board of Regents and the University of Idaho's land-grant designation, the university offers select undergraduate, master's, specialist's and doctorate degree programs in Idaho Falls. Additional professional programs, certificates, and courses are offered in response to needs of the community. Over 150 University of Idaho courses are offered at the center each semester. Courses are taught on-site by resident and adjunct faculty and are offered via interactive video, electronic media, and the Internet.

Undergraduate degrees are available in the following disciplines:

- Criminology (online)
- Environmental Science
- General Studies
- History (online)
- Industrial Technology
- Organizational Science (online)
- Psychology (online)
- Sociology (online)

Graduate degrees are available in the following disciplines:

- Adult & Org/Learning and Leadership (online)
- Biological Engineering
- Chemical Engineering
- Chemistry
- Civil Engineering
- Computer Science
- Computer Engineering
- Curriculum and Instruction (online)
- Cybersecurity
- Educational Leadership (online)
- Electrical Engineering
- Engineering Management
- Environmental Science
- Geology
- Interdisciplinary Studies
- Mathematics (online)
- Mechanical Engineering
- Natural Resources (online)
- Nuclear Engineering
- Psychology (online)
- Public Administration (online)
- Statistical Science (online)
- Technology Management
- Water Resources

Research

The center is strategically located next to the Idaho National Laboratory (INL) and The Center for Advanced Energy Studies (CAES). This location

is ideal for research collaboration opportunities. The Idaho Falls Center focuses on delivering advanced education and research programs addressing state and national energy and security needs in partnership with the INL, industry, and university partners.

Idaho National Laboratory

In operation since 1949, the INL is a science-based, applied engineering national laboratory dedicated to supporting the U.S. Department of Energy's missions in nuclear and energy research, science, and national defense. The laboratory works with national and international governments, universities, and industry partners to discover new science and develop technologies that underpin the nation's nuclear and renewable energy, national security, and environmental missions.

Center for Advanced Energy Studies

CAES is focused on creating a unique and collaborative environment for our energy future, including cross-organizational and peer-to-peer technical collaboration. It addresses science, engineering and technology development critical to U.S. and global energy needs. CAES' research focuses on energy affordability, environmental safety, and technology research in nuclear, hydrogen, fossil fuels (coal, oil and gas), plus the full spectrum of renewable energy sources. CAES' research agenda fosters collaborations and interdisciplinary studies and makes its research and development facilities, and those of INL, available to a network of universities.

Community and Statewide Services

The College of Agriculture District IV Research and Extension Office at the Idaho Falls Center provides extension programming and agriculture related activities.

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COURSE INFORMATION

Course Numbering System and Key to Abbreviations and Symbols

Numbering System

Courses numbered 001 are continuing education unit (CEU) courses; those numbered 010-099 are remedial-level courses carrying no credit; those numbered 100-299 are lower-division courses primarily for undergraduates; 300-499 are upper-division courses primarily for advanced undergraduates, fifth-year students, and graduate students; courses numbered 500-599 are intended for and are restricted to students enrolled in the College of Graduate Studies (see regulation B-7 (p. 72) for the exception to this rule); courses numbered 600-699 are intended for and are restricted to students enrolled in a doctoral program; courses numbered 710-720 are non-academic courses intended for and restricted to students enrolled in the College of Graduate Studies to assist with maintaining continuous enrollment; and courses numbered 800-999 are intended for and are restricted to students enrolled in the College of Law.

University of Idaho General Education Categories and Idaho GEM Categories

University of Idaho Category	Idaho GEM Category
Communication	Oral Communication
English	Written Communication
Mathematics	Mathematical Ways of Knowing
Natural and Applied Sciences	Scientific Ways of Knowing
Humanities	Humanistic and Artistic Ways of Knowing
Social Science	Social and Behavioral Ways of Knowing
American Diversity	Institutionally Designated Competency Area
International	Institutionally Designated Competency Area
Integrated Studies	Institutionally Designated Competency Area
Senior Experience	Institutionally Designated Competency Area

Subtitled Courses

An 's' in parentheses between the number and title of a course indicates that the course may be offered under the main title and/or with an appended subtitle, e.g., "Seminar" and/or "Seminar in the History of the Pacific Northwest." The specific area will normally be listed in the Class Schedule as a separate section of the main course.

Credit Designations

Below each course title, the number of credits authorized is shown in parentheses. Typical designations are:

3 credits - three semester credits

1-3 credits - one to three semester credits

1-3 credits, max 3 - one to three credits during any academic session and the course may be repeated until the maximum of three credits has been earned

3 credits, max 12 - three credits during any academic session and the course may be repeated until the maximum of twelve credits has been earned

Credit arranged - credits to be arranged from 1 to 16 credits, and the course may be repeated for credit without restriction as to maximum

1-3 credits, max arranged - one to three credits during any academic session, and the course may be repeated without restriction as to maximum

Standard Course Numbers

University-wide numbers have been established for certain categories of courses. These courses need not be listed in a subject-field section in the catalog unless they are to be offered regularly; they may be offered and listed in the Class Schedule whenever they are needed. The following course numbers and titles are authorized:

- Seminar - 200, 400, 501, 601
- Workshop - 203, 403, 503, 603
- Special Topics - 204, 404, 504, 604
- Professional Development - 405, 505, 605
- Internship - 298, 398, 498, 598, 698
- Directed Study - 299, 499, 502, 602
- Master's Research and Thesis - 500
- Graduate Practicum - 597
- Non-thesis Master's Research - 599
- Doctoral Research and Dissertation - 600

Other Abbreviations

alt/years - offered in alternate years

coreq - corequisite

dept - department

exam - examination

GPA - grade-point average

lab(s) - laboratory(-ies)

P/F - graded on the basis of pass or fail

prereq - prerequisite

COURSES

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Accounting (ACCT)

ACCT 200 (s) Seminar (1-16 credits)

Credit arranged

ACCT 201 Introduction to Financial Accounting (3 credits)

Overview of the nature and purpose of general purpose financial statements provided to external decision makers; emphasis on use of financial statement information. May involve evening exams.

ACCT 202 Introduction to Managerial Accounting (3 credits)

Intro to cost behavior and managerial use of accounting information for planning, control, and performance evaluation. May involve evening exams. Typically Offered: Varies.

Prereqs: ACCT 201

ACCT 203 (s) Workshop (1-16 credits)

Credit arranged

ACCT 204 (s) Special Topics (1-16 credits)

Credit arranged

ACCT 299 (s) Directed Study (1-16 credits)

Credit arranged Individual sections may be graded P/F.

Prereqs: Permission

ACCT 305 Accounting Information Systems (3 credits)

Role of accounting information systems in effective control of organizations. Topics include: the description and analysis of the accounting cycles and internal controls including the implementation and evaluation of internal control effectiveness; the role of internal controls in the detection and prevention of fraud; the conceptual design and documentation as well as the practical use of accounting information systems. May include evening exams.

Prereqs: ACCT 201 and ACCT 202

ACCT 315 Intermediate Financial Accounting I (3 credits)

Preparation of general purpose financial statements for external users based on U. S. generally accepted accounting principles. Emphasis on transactions relating to financing and investing activities. Conceptual framework based instruction includes comparison with alternative treatments used in other countries and under U. S. tax code. May include evening exams.

Prereqs: ACCT 201 and ACCT 202

ACCT 325 Intermediate Financial Accounting II (3 credits)

Continuation of ACCT 315. Covers more advanced topics in the preparation of general purpose financial statements for external users according to US GAAP. Includes accounting database research. May include evening exams.

Prereqs: ACCT 315

ACCT 385 Cost and Management Accounting (3 credits)

Design and use of cost management systems to support decision making and influence behavior; includes tracing costs to processes, activities, products, and customers; budgeting and responsibility accounting. May require evening exams. Typically Offered: Varies.

Prereqs: ACCT 201 and ACCT 202

ACCT 400 (s) Seminar (1-16 credits)

Credit arranged

ACCT 403 (s) Workshop (1-16 credits)

Credit arranged

ACCT 404 (s) Special Topics (1-16 credits)

Credit arranged

ACCT 405 (s) Professional Development (1-16 credits, max arranged)

Joint-listed with ACCT 505

Credit arranged. Credit earned in these courses will not be accepted toward graduate degree programs.

Prereqs: permission

ACCT 415 Advanced Financial Accounting & Reporting (3 credits)

Joint-listed with ACCT 515

Accounting and financial reporting for business combinations (including consolidated financial statements), international accounting issues, foreign currency translation, and accounting for partnerships. The course emphasizes the conceptual understanding of accounting for mergers and acquisitions as well as the technical requirements. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit.

Prereqs: ACCT 325 or Graduate Standing

ACCT 421 Accounting Data Analytics (3 credits)

Joint-listed with ACCT 521

Role of accounting data analytics in the detection and assessment of fraud in an organizational setting. Topics include: definitions and detection of fraud; the application of data analytic and statistical techniques to detect different types of frauds; and the use of data analytics techniques in the audit function. Additional work required for graduate credit. Typically Offered: Spring.

Prereqs: ACCT 305

ACCT 440 Fraud Examination (3 credits)

Joint-listed with ACCT 550

Fraud prevention, detection, investigation, and resolution. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit. Typically Offered: Varies.

Prereqs: ACCT 201

ACCT 465 External Financial Reporting (1 credit)

Preparation of financial statements and financial reports for businesses. Typically Offered: Fall, Spring.

ACCT 469 Internal Controls (1 credit)

Evaluate accounting internal controls and information systems and technology controls to assure secure and accurate data and systems. Typically Offered: Fall, Spring.

ACCT 472 Corporate Accounting Finance - Right hand side of the Balance Sheet (1 credit)

Study of sources and effectiveness of financing approaches including the effects on cost of capital and equity value. Typically Offered: Fall and Spring.

Prereqs: ACCT 465

ACCT 476 Professional Accounting Ethics (1 credit)

Study of professional and ethical issues facing accounting professions. Typically Offered: Fall and Spring.

ACCT 482 Enterprise Accounting (3 credits)

Joint-listed with ACCT 582

Carries no credit toward master's degree in accounting. Both business and non-business students will learn the critical role played by financial statements as entrepreneurs try to launch a new business. The trade-offs of various funding sources and their impacts on financial statements are also explored. Content will be presented in an integrated manner, rather than concept by concept, to emphasize the interrelatedness of forecasts and assumptions regarding revenues, costs, and financing on financial statements and thus, the resulting business model. Additional projects and/or assignments required for graduate credit. May involve evening exams.

ACCT 483 Fundamentals of Federal Taxation (3 credits)

Income determination, deductions, accounting methods, sales of property, deferral of tax, taxation of the individual, tax research, with primary emphasis on tax planning; the case method is used. May include evening exams.

Prereqs: ACCT 201 and ACCT 202

ACCT 484 Federal Taxation of Entities (3 credits)

Joint-listed with ACCT 584

Taxation of corporations and partnerships with emphasis on tax planning, tax research; the case method is used. Additional class meetings, projects, and/or assignments required for graduate credit. May include evening exams.

Prereqs: ACCT 483

ACCT 492 Auditing and Controls (3 credits)

Value of the audit, concepts of attestation and relevant reporting, theories of evidence, development of risk analysis approach to auditing, with emphasis on internal and performance auditing; documentation and understanding of internal control structure, environment, system design, procedures and testing. May include evening exams.

Prereqs: ACCT 305 and ACCT 315

ACCT 498 Accounting Internship Program (1-3 credits, max 3)

Formalized learning experience in an actual work setting. Students work within an accounting related field (accounting, auditing, and taxation) and commit to a minimum of 50 hours of direct supervised work for each semester credit. May include evening exams. This course does not count as an undergraduate accounting elective. Graded P/F

Prereqs: Senior status

ACCT 499 (s) Directed Study (1-16 credits)

Credit arranged Individual sections may be graded P/F.

Prereqs: Permission.

ACCT 500 Master's Research and Thesis (1-6 credits, max 6)**ACCT 501 (s) Seminar (1-16 credits)**

Credit arranged

ACCT 502 (s) Directed Study (1-16 credits)

Credit arranged Individual sections may be graded P/F.

Prereqs: Permission

ACCT 503 (s) Workshop (1-16 credits)

Credit arranged

ACCT 504 (s) Special Topics (1-16 credits)

Credit arranged

ACCT 505 (s) Professional Development (1-16 credits, max arranged)

Joint-listed with ACCT 405

Credit arranged. Credit earned in these courses will not be accepted toward graduate degree programs.

ACCT 511 CPA Review: Financial Accounting and Reporting (3 credits)

This course covers material for financial accounting and reporting included in the CPA exam - FAR section for commercial entities under U. S. GAAP, governmental accounting, and not-for-profit accounting. Recommended preparation: ACCT 325 or Equivalent. Typically Offered: Fall.

Prereqs or Coreqs: ACCT 515 or ACCT 530

ACCT 512 CPA Review: Audit (3 credits)

This course covers material related to auditing, including audit reports and procedures, generally accepted auditing standards, attestation and other engagements, and government auditing. Recommended preparation: ACCT 492. Typically Offered: Spring.

Prereqs or Coreqs: ACCT 530 or ACCT 592

ACCT 515 Advanced Financial Accounting & Reporting (3 credits)

Joint-listed with ACCT 415

Accounting and financial reporting for business combinations (including consolidated financial statements), international accounting issues, foreign currency translation, and accounting for partnerships. The course emphasizes the conceptual understanding of accounting for mergers and acquisitions as well as the technical requirements. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit.

Prereqs: ACCT 325 or Graduate Standing

ACCT 521 Accounting Data Analytics (3 credits)

Joint-listed with ACCT 421

Role of accounting data analytics in the detection and assessment of fraud in an organizational setting. Topics include: definitions and detection of fraud; the application of data analytic and statistical techniques to detect different types of frauds; and the use of data analytics techniques in the audit function. Additional work required for graduate credit. Typically Offered: Spring.

Prereqs: ACCT 305

ACCT 530 Accounting for Public Sector Entities (3 credits)

Conceptual and procedural issues involving accounting, reporting, and auditing public sector organizations; topics include state and local governmental accounting principles, GASB/FASB jurisdiction over not-for-profit organizations, federal financial and performance auditing standards, and relevant current issues. May include evening exams. Typically Offered: Spring.

Prereqs: ACCT 315

ACCT 550 Fraud Examination (3 credits)

Joint-listed with ACCT 440

Fraud prevention, detection, investigation, and resolution. May include evening exams. Additional class meetings, projects, and/or assignments required for graduate credit. Typically Offered: Varies.

Prereqs: ACCT 201

ACCT 555 Forensic Accounting (3 credits)

Explore forensic accounting processes that use accounting, auditing and investigative skills to examine and report on individuals or other legal entities for the purpose of providing business evaluations or uncovering and reporting accounting crime that can be used in legal proceedings.

ACCT 561 Comparative Accounting Theory (3 credits)

Seminar on the theory and practice of corporate financial reporting and highlights the development of generally accepted accounting principles. The students will research and communicate recommendations regarding financial accounting reporting issues, using the authoritative accounting literature that underlies the financial accounting choices. May include evening exams. (Fall only)

Prereqs: ACCT 415 or

Prereqs or Coreqs: ACCT 515

ACCT 566 Cost Management (1 credit)

Use of cost management systems to support decision making and influence behavior; product, service, process, and customer costing as well as budgeting and responsible accounting. Typically Offered: Fall and Spring.

Prereqs: ACCT 465

ACCT 567 Planning, Budgeting, & Forecasting (1 credit)

Students will develop and use a strategy-driven Master Budget for managerial planning and control. Typically Offered: Fall and Spring.

Prereqs: ACCT 566

ACCT 568 Performance Management (1 credit)

This course evaluates performance measures at both the operational and strategic levels. Typically Offered: Fall and Spring.

Prereqs: ACCT 567

ACCT 569 Technology and Analytics (1 credit)

Study of analytic techniques to present and report results, identifying, defining, and transforming data in preparation for analysis. Typically Offered: Fall and Spring.

Prereqs: ACCT 469

ACCT 571 Financial Statement Analysis (1 credit)

The course emphasizes the analysis of accounting financial performance for business valuation. Typically Offered: Fall and Spring.

Prereqs: ACCT 569

ACCT 573 Decision Analysis (1 credit)

This course will apply managerial planning tools for decision making. Typically Offered: Fall and Spring.

Prereqs: ACCT 472

ACCT 574 Enterprise Risk Management (1 credit)

The study of the COSO Risk Management framework and applying the framework in appropriate environments. Typically Offered: Fall and Spring.

Prereqs: ACCT 573

ACCT 575 Investment Decisions (1 credit)

Study of capital investment projects and the evaluation of the investments. Typically Offered: Fall and Spring.

Prereqs: ACCT 574

ACCT 582 Enterprise Accounting (3 credits)

Joint-listed with ACCT 482

Carries no credit toward master's degree in accounting. Both business and non-business students will learn the critical role played by financial statements as entrepreneurs try to launch a new business. The trade-offs of various funding sources and their impacts on financial statements are also explored. Content will be presented in an integrated manner, rather than concept by concept, to emphasize the interrelatedness of forecasts and assumptions regarding revenues, costs, and financing on financial statements and thus, the resulting business model. Additional projects and/or assignments required for graduate credit. May involve evening exams.

ACCT 584 Federal Taxation of Entities (3 credits)

Joint-listed with ACCT 484

Taxation of corporations and partnerships with emphasis on tax planning, tax research; the case method is used. Additional class meetings, projects, and/or assignments required for graduate credit. May include evening exams.

Prereqs: ACCT 483

ACCT 585 Estate and Elder Planning (3 credits)

Gift and estate tax consequences on property transfer during life and at death, tax research, and estate planning, elder planning and personal financial planning. Recommended preparation ACCT 484/ACCT 584.

(Spring only)

Prereqs: ACCT 483

ACCT 586 Contemporary Management Accounting Issues (3 credits)

Role of managerial accounting skills in supporting effective analysis and decisions in an organization. Synthesis of these managerial accounting skills through case analysis, as well as written and oral reports. Topics include the Balanced Scorecard; determining and assigning costs using activity based costing, budgeting and financial control; enterprise accounting system design and control. May include evening exams.

ACCT 590 Advanced Auditing Seminar (3 credits)

Independent auditor's role, legal responsibilities, and code of conduct; concepts, standards, and methods in audit judgment formulation. (Spring only)

Prereqs: ACCT 492

ACCT 592 Financial Accounting and Reporting Seminar (3 credits)

Seminar course designed to strengthen a student's ability to interpret financial statements and their related footnote disclosures through the examination of financial reporting issues from a user's perspective. Discussions also include managers' incentives and ability to exert discretion over reported earnings and the interplay between a company's corporate strategy and its financial reporting policies and practices. May include evening exams. (Spring only)

Prereqs: ACCT 415 or

Prereqs or Coreqs: ACCT 515

ACCT 595 Practicum in Tutoring (1 credit)

Tutorial services performed by advanced students under faculty supervision. A paper discussing the tutoring experience is required.

Prereqs: Permission

ACCT 598 (s) Internship (1-3 credits, max 3)

Career relevant learning experience in actual work setting with professional-level responsibilities. Students work within an accounting related field (accounting, auditing, and taxation) and commit to a minimum of 50 hours of direct supervised work for each semester credit. A paper documenting relevance of work experience and a presentation to undergraduate accounting students may be required.

ACCT 599 (s) Non-thesis Master's Research (1-6 credits, max 6)

May count only 3 cr toward degree. Student works with individual professor to design a research study, collect and analyze data, and prepare written report.

Prereqs: At least one course in research methodology and permission.

Adult, Org Learnng and Ldrshp (AOLL)**AOLL 203 (s) Workshop (1-16 credits)**

Credit arranged

AOLL 299 (s) Directed Study (1-16 credits)

Credit arranged

AOLL 400 (s) Seminar (1-16 credits)

Credit arranged

AOLL 403 (s) Workshop (1-16 credits)

Credit arranged

AOLL 404 (s) Special Topics (1-16 credits)

Credit arranged

AOLL 405 (s) Professional Development (1-16 credits)

Credit arranged

AOLL 499 (s) Directed Study (1-16 credits)

Credit arranged

AOLL 500 Master's Research & Thesis (1-16 credits)

Credit arranged

AOLL 501 (s) Seminar (1-16 credits)

Credit arranged

AOLL 502 (s) Directed Study (1-16 credits)

Credit arranged

AOLL 503 (s) Workshop (1-16 credits, max arranged)

Credit arranged. Graded Pass/Fail.

Prereqs: Permission

AOLL 504 (s) Special Topics (1-16 credits)

Credit arranged

AOLL 505 (s) Professional Development (1-16 credits, max arranged)

Credit arranged. Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward grad degree program, but may be used in a fifth-year program. Additional projects/ assignments required for graduate credit.

AOLL 507 Future of Education and Work (3 credits)

This course is designed to provide students the opportunity to examine the world of work and education through a futuristic lens. Typically Offered: Fall and Varies.

AOLL 510 Foundations of Human Resource Development (3 credits)

This course provides a foundation of Human Resource Development including the fundamental processes, principles, theories, trends, and contemporary challenges. Strategies, techniques, tools, and procedures are examined for application. Typically Offered: Spring and Varies.

AOLL 526 Instructional Design and Curriculum (3 credits)

This course provides an in-depth examination and implementation of instructional design systems and curriculum development as a systematic method of teaching and learning. The course prepares students to design effective instruction based on research in human learning and communication. Typically Offered: Spring (Odd Years) and Varies.

AOLL 528 Program Planning, Development, and Evaluation (3 credits)

This course focuses on the systematic development, planning, and evaluation of programs. Designed to promote application of concepts, theories, and models. Students will learn evaluation of design, activities, and materials related to program planning. Typically Offered: Spring (Even Years) and Summer.

AOLL 560 Career Development in Organizations (3 credits)

This course focuses on career development by looking at both individual career planning and organizational career management. Students will develop an understanding of career development processes and theories, create a toolkit of career resources, foster an awareness of their own career development, and gain an understanding about the programs and processes that organizations use to support the career development of their employees. Typically Offered: Spring and Varies.

AOLL 570 Introduction to Research in Adult/Organizational Learning and Leadership (3 credits)

This course prepares students to interpret and evaluate scholarly research. Students will have the opportunity to design a research proposal based on a problem they identify in the Adult, Organizational, Learning, and Leadership literature. Typically Offered: Fall and Varies.

AOLL 573 Adult Learners: Foundations and Characteristics (3 credits)

In this course, students examine the philosophical, psychological, social, and economic foundations of adult education and characteristics of adult learners. This course introduces the field of adult education as an area of study, and considers adult education, informal and formal learning in diverse settings. Typically Offered: Fall.

AOLL 574 Adult and Transformational Learning (3 credits)

This course focuses on transformative learning and Andragogy. Foundational elements of the course include cognitive, humanistic, social learning, behavioral, constructivist, and developmental learning for adults. Typically Offered: Spring and Varies.

AOLL 575 Strategies for Facilitating Adult Learning (3 credits)

This course is designed to promote reflection on the underlying belief structure of teaching adults and learning in adulthood. This course is designed to broaden and deepen students understanding of adult learning theory, and strengthen their skills in the practice of teaching adults. Typically Offered: Spring.

AOLL 577 Organization Development (3 credits)

This course focuses on an examination of the theory and practices of using planned change strategies for organization development (OD). Students will examine organizations through four frames (structural, human resources, political, and symbolic); analyze organizational case studies; and reflect upon their own leadership styles in organizational leadership. The course provides an introduction to major concepts, skills, and techniques for organization development and change. Typically Offered: Fall and Varies.

AOLL 581 Theory & Practices & Challenges of Leadership (3 credits)

This course focuses on analysis and study of effective leadership including theories, styles, practices, challenges, and methods. Typically Offered: Fall and Varies.

AOLL 583 Organizational Leadership (3 credits)

This course focuses on learning about leadership skills within the context of an organization. The course prepares students to become better organizational leaders as well as followers. Considerable introspection and exploration of the inner territory is expected. Typically Offered: Spring and Varies.

AOLL 597 (s) Practicum (1-16 credits)

Credit arranged. Supervised field experience in an appropriate public or private agency.

AOLL 598 (s) Internship (1-16 credits, max arranged)

Credit arranged. Supervised experience in teacher education, administration, supervision, or ancillary services in adult education. Graded Pass/Fail.

Prereqs: Permission

AOLL 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

AOLL 600 Doctoral Research & Thesis (1-45 credits)

Credit arranged

AOLL 615 (s) Research Apprenticeship in Adult, Organizational Learning and Leadership (1-16 credits, max 16)

The purpose of Research Apprenticeship is to prepare doctoral students for organization, education, and social research activities. The course focuses on collegial research projects and processes; students engage in research and scholarly activities alongside faculty. Students must be admitted into the doctoral program with a specialty in AOLL. Typically Offered: Fall and Spring.

Aerospace Studies (AERO)

AERO 101 USAF Heritage and Values I (1 credit)

Survey course that introduces students to the United States Air Force and the Air Force Reserve Officer Training Corps (AFROTC). The course primarily focuses on the mission and organization of the Air Force, Air Force dress and appearance standards, military customs and courtesies, Air Force heritage and introduction to communication skills. Weekly lab consisting of Air Force customs and courtesies, health and physical fitness, and drill ceremonies is mandatory for cadets. (Fall only)

AERO 102 USAF Heritage and Values II (1 credit)

Survey course that introduces students to the United States Air Force and the Air Force Reserve Officer Training Corps (AFROTC). The course primarily focuses on the mission and organization of the Air Force, Air Force dress and appearance standards, military customs and courtesies, Air Force heritage and introduction to communication skills. Weekly lab consisting of Air Force customs and courtesies, health and physical fitness, and drill ceremonies is mandatory for cadets. This course is a continuation of concepts and information introduced in AERO 101. (Spring only)

AERO 103 Leadership Laboratory I (2 credits, max 4)

Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.

Coreqs: AERO 101 or AERO 102

AERO 201 USAF Team and Leadership Fundamentals I (1 credit)

Fundamental principles of leadership, followership, team building, and accountability within military. Develops communication skills. Cadets also attend weekly leadership laboratory. (Fall only)

Prereqs or Coreqs: AERO 101

AERO 202 USAF Team and Leadership Fundamentals II (1 credit)

Fundamental principles of leadership, followership, team building, and accountability within military. Develops communication skills. Cadets also attend weekly leadership laboratory. This course is a continuation of concepts and information introduced in AERO 201. (Spring only)

Prereqs or Coreqs: AERO 102

AERO 205 Leadership Laboratory II (2 credits, max 4)

Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.

Coreqs: AERO 201 or AERO 202

AERO 299 (s) Directed Study (1-16 credits)

Credit arranged

AERO 311 USAF Leading People and Effective Communication I (3 credits)

Applied leadership through supervision, mentorship, and case studies. Expands on military knowledge, ethics, and communications. Cadets attend weekly leadership laboratory. (Fall only)

Prereqs: AERO 101, AERO 102, AERO 201, AERO 202. Student must be pursuing a commission in the military to take this course.

AERO 312 USAF Leading People and Effective Communication II (3 credits)

Applied leadership through supervision, mentorship, and case studies. Expands on military knowledge, ethics, and communications. Cadets attend weekly leadership laboratory. This course is a continuation of concepts and information introduced in AERO 311. (Spring only)
Prereqs: AERO 311. Student must be pursuing a commission in the military to take this course.

AERO 313 Leadership Laboratory III (2 credits, max 4)

Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.

Coreqs: AERO 311 or AERO 312

AERO 404 (s) Special Topics (1-16 credits)

Credit arranged

AERO 411 USAF National Security, Leadership, and Commissioning Preparation I (3 credits)

An examination of the national security process, regional studies, advanced leadership ethics, and Air Force doctrine; focus of the military profession, officership, military justice, civilian control of the military, preparation for active duty, and refinement of communication skills; a lab consisting of advanced leadership experiences is mandatory for cadets. (Fall only)

Prereqs: AERO 311. Student must be pursuing a commission in the military to take this course.

AERO 412 USAF National Security, Leadership, and Commissioning Preparation II (3 credits)

An examination of the national security process, regional studies, advanced leadership ethics, and Air Force doctrine; focus of the military profession, officership, military justice, civilian control of the military, preparation for active duty, and refinement of communication skills; a lab consisting of advanced leadership experiences is mandatory for cadets. This course is a continuation of concepts and information introduced in AERO 411. (Spring only)

Prereqs: AERO 312. Student must be pursuing a commission in the military to take this course.

AERO 413 Leadership Laboratory IV (2 credits, max 4)

Introduces students to leadership principles, military experience, and management practice; 2 hours of laboratory and 2 hours of required physical training. Graded Pass/Fail.

Coreqs: AERO 411 or AERO 412

AERO 499 (s) Directed Study (1-16 credits)

Credit arranged

Agricultural and Life Sciences (AGLS)

AGLS 200 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: Permission

AGLS 204 (s) Special Topics (1-16 credits)

Credit arranged

AGLS 298 (s) Internship (1-16 credits)

Credit arranged

AGLS 299 (s) Directed Study (1-16 credits)

Credit arranged

Prereqs: Departmental Permission

AGLS 398 (s) Internship (1-6 credits, max 6)

Graded P/F.

Prereqs: Permission

AGLS 400 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: Departmental Permission

AGLS 403 (s) Workshop (1-16 credits)

Credit arranged

AGLS 404 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: Departmental Permission

AGLS 405 (s) Professional Development (1-16 credits)

Credit arranged

AGLS 494 CALS Peer Leaders (1 credit, max 6)

The CALS Peer Leaders provide students the opportunity to further develop leadership and mentoring skills through a variety of activities involving student mentoring. The objective is to integrate students into college life; create awareness of the academic programs; and be available to guide students by fostering department and college engagement. Graded A/Pass/Fail.

Prereqs: Departmental Permission

AGLS 495 (s) CALS Ambassadors (1-16 credits, max arranged)

Credit arranged. Student ambassadors are selected through an application and interview process to represent CALS to future students at recruiting activities and functions. Students will learn skills in leadership, communication, networking, public speaking, and time management. Students will be responsible for visiting high schools and attending college and career fairs and recruiting events on campus.

Prereqs: Departmental Permission

AGLS 498 (s) Internship (1-16 credits)

Credit arranged

AGLS 499 (s) Directed Study (1-16 credits)

Credit arranged

Prereqs: Departmental Permission

AGLS 504 (s) Special Topics (1-16 credits)

Credit arranged

AGLS 505 (s) Professional Development (1-16 credits)

Credit arranged

Agricultural Economics (AGEC)

AGEC 101 The Business of Agriculture (1 credit)

This course is intended for first-year students majoring in Agribusiness or Agricultural Economics. An examination of current issues in agriculture and how economic and business principles can be used to analyze issues, and career opportunities in the discipline.

AGEC 204 (s) Special Topics (1-16 credits)

Credit arranged

AGEC 278 Farm and Agribusiness Management (4 credits)

Decision making and profit maximization using economic principles, records, enterprise analysis, and comparison of alternative farming practices. Three lectures and one 2-hour lab per week. Recommended Preparation: ECON 202.

AGEC 289 Agricultural Markets and Prices (3 credits)

Economics of agricultural markets and pricing institutions; analysis of supply, demand, elasticity, futures markets; institutional arrangements in food marketing. Recommended Preparation: ECON 202.

AGEC 299 (s) Directed Study (1-16 credits)

Credit arranged

AGEC 301 Managerial Economics: Production (3 credits)

Microeconomic principles applied to agricultural production and the management of agribusiness firms with an introduction to spreadsheet based statistical, mathematical and optimization techniques for analyzing and solving real world management problems.

Prereqs: ECON 202 or ECON 272; and MATH 143 with a grade of 'C' or better

AGEC 302 Managerial Economics: Consumption & Markets (3 credits)

Microeconomic principles applied to agricultural markets and consumer demand, with an introduction to spreadsheet based statistical and forecasting tools for analyzing associated real world pricing and consumer demand concerns facing managers of agribusiness firms.

Prereqs: ECON 202 or ECON 272; and MATH 143

AGEC 303 Principles of Agricultural Economics (1 credit)

Review, discussion and application of basic economic, agribusiness, and natural resource principle as applied to the agricultural economics profession. The principles are reviewed in a game show format. Students will have an opportunity to attend the American Agricultural Economics Association annual meetings and test their knowledge of these principles with students from other universities. Recommended preparation: AGEC 301 and AGEC 302. (Spring only)

Prereqs: AGEC 101 and AGEC 278; and ECON 272 or ECON 201 and ECON 202

AGEC 333 Introduction to Sales (3 credits)

Introduction to the economic and consumer behavior theory of the sales industry. Fundamentals of professional business-to-business selling, business-to-consumer selling, sales ethics, and career assessment. One evening practicum required and a day-long job shadowing required. (Spring only)

AGEC 356 Agricultural and Rural Policy (3 credits)

Goals, methods, results of economic programs and policies in agriculture, including role of governmental and farm organizations. Recommended Preparation: ECON 201 and 202.

AGEC 389 Understanding and Using Futures and Options Markets (3 credits)

How futures and options markets work, types of futures and options markets, a practical understanding of their role as investment and risk management tools, and individual student management of a simulated futures and options trading account.

Prereqs: MATH 143 or higher, and ECON 202 or ECON 272

AGEC 389L Applied Commodity Market Analysis Lab (1 credit)

The lab builds upon agricultural marketing risk-management concepts introduced in AGEC 489 – "Understanding and Using Futures and Options Markets". Students will develop spreadsheets containing historical supply and demand data along with actual cash and futures price series on chosen commodity sectors. Appropriate tools and methodologies will then be applied to analyze historical patterns, parameters, basis, seasonality and charting techniques. Lab material coverage will coincide with homework assigned in AGEC 489. Dataset, analytical tools, and actual futures trading platform will then be utilized to develop an applied risk-management hedging program. Typically Offered: Spring.

Coreqs: AGEC 389

AGEC 398 (s) Internship (1-6 credits, max 6)

Graded P/F.

Prereqs: Permission

AGEC 404 (s) Special Topics (1-16 credits)

Credit arranged

AGEC 405 (s) Professional Development (1-16 credits)

Credit arranged

AGEC 410 Experiencing the Idaho Public Policy Making Process (1 credit)

Assessment of policy topics currently facing the agricultural industry. Students will travel to Boise while the legislature is in session to become familiar with the policy making process and to discuss current policy issues with industry and legislative officials. Three, three hour evening classes. (Spring Only)

Prereqs: AGEC 356 or permission

AGEC 414 Financial Analysis of Agricultural Firms (3 credits)

Applying cost analysis and three financial statements analysis to the management of an agricultural business. Evaluating relative performance of agricultural firms by using financial ratios, ride-on investment evaluation (by employing Net Present Value and Internal Rate of Return), leasing vs. buying, and financial modelling (proforma statement) for agricultural firms. Examination of cost and accrual based income statement for tax and management decisions. Create a cash flow statement for agricultural firms based on the income and balance sheet statements. Three hours of lec per week. (Fall Only)

Prereqs: ACCT 201 and AGEC 278, or permission

AGEC 433 Advanced Sales (3 credits)

Building on principles of professional sales and sales management, students will learn additional processes, procedures and practices of sales professionals. Students will apply the old and new concepts when selling a product to be determined to actual customers. Semester-long project requires working with sales professionals or in professional sales capacity.

Prereqs: AGEC 333

AGEC 447 International Development Economics (3 credits)

General Education: International

Cross-listed with ECON 447

Characteristics of development; historical perspective; macroeconomic theories and policies: models of growth, poverty, inequality, trade, aid and debt; microeconomic theories and policy: health, nutrition and education, agriculture, rural markets for land, labor and credit, and corruption. Typically Offered: Spring.

Prereqs: ECON 201 and ECON 202, or ECON 272, or Permission

AGEC 451 Applied Environmental and Natural Resource Economics (3 credits)

Cross-listed with ECON 451

Economic analysis of current issues pertaining to environmental and natural resources. Economic tools will be applied in the contexts of climate change, valuation of the environment, sustainable development, energy, water, environmental risk, etc. Specific cases used to describe economic theories and tools used by experts working in the field.

Prereqs: AGEC 301 or AGEC 302, or ECON 351 or ECON 352, or by Permission.

AGEC 452 Water Economics and Policy Analysis (3 credits)

Joint-listed with WR 552

This course will provide students with an in-depth look at the role of economics in water resource planning. Topics will include an introduction to water law, common concepts in hydrology, and the tools necessary to evaluate irrigation and other water use decisions. The course will focus on economic theory and a practical background of water resource management, as such, significant time will be spent developing the tools most frequently utilized by water resource economists. This includes Linear Programming, Cost/Benefit Analysis, Residual Imputation methods, Regression Analysis, Input-Output Modeling, Survey Design and Implementation, and Cost of Avoidance Techniques. Additional work required for graduate credit. Typically Offered: Spring.

Prereqs: AGEC 301 or AGEC 302, or ECON 351 or ECON 352. Cooperative: open to WSU degree-seeking students.

AGEC 468 Risk Management: Commodity Merchandising (1 credit, max 6)

Fundamental functions of a commodity merchandiser within the agricultural food supply chain, including risk management through basis trading and margin management of a hedged marketing position, are learned through utilizing actual cash grain ownership and exchange-traded futures. One credit lab also engages students directly with regional grain trade, commodity brokers and allied industries.

AGEC 469 Risk Management: Commodity Trading (1 credit, max 6)

One-credit lab which engages students in the actual trading of agricultural commodity futures and options. Course emphasizes concepts, tools and strategies as they relate to identifying trading opportunities across agricultural commodities, managing portfolio risk and increasing operational profits through implementing trading positions in commodity futures markets.

Prereqs: Instructor Permission

AGEC 477 Law, Ethics, and the Environment (3 credits)

Cross-listed with ENVS 477

Examines the laws and related ethical questions pertaining to social and community-based natural resource and agroecosystem issues. Recommended Preparation: BLAW 265. Typically Offered: Varies.

Prereqs: Junior standing and NRS 235 or FOR 235

AGEC 478 Advanced Agribusiness Management (3 credits)

General Education: Senior Experience

The capstone class for Agribusiness and Agricultural Economic students. Economics and agribusiness theory is put into practice through decision cases. Team building, written, and oral presentation skills are stressed. Typically Offered: Spring.

Prereqs: AGEC 301, AGEC 302, ACCT 201, ACCT 202, and Senior standing.

AGEC 481 Agricultural Markets in a Global Economy (3 credits)

General Education: International

Analysis of agricultural market competition and performance in a global economy; economics of global food and commodity markets and trade; economic principles applied to interaction of economic events in the world food economy. Typically Offered: Fall.

Prereqs: AGEC 301 or ECON 352 or permission

AGEC 490 Commodity Price Analysis (3 credits)

Methods used to analyze factors affecting agricultural prices, analysis of agricultural prices and price movements with respect to time, space, and form, and examination of methods of price forecasting and techniques of time series analysis.

Prereqs: AGEC 289, STAT 251, AGEC 389 or AGEC 489 or FIN 466

AGEC 497 Teaching Ag Econ/Agribusiness (1-3 credits, max 6)

Supervised class observation and course preparation, and an opportunity to present one or several lectures in specific agribusiness and agricultural economics areas. Incorporates learning and teaching methods applied in professional settings; may include advanced practices for competitions, field or lab activities, and client interactions. Max enrollment 5.

Recommended preparation: senior standing.

Prereqs: Permission

AGEC 498 (s) Internship (1-16 credits)

Credit arranged

AGEC 499 (s) Directed Study (1-16 credits)

Credit arranged

AGEC 500 Master's Research and Thesis (1-16 credits)

Credit arranged

AGEC 501 (s) Seminar (1-16 credits)

Credit arranged

AGEC 502 (s) Directed Study (1-16 credits)

Credit arranged

AGEC 504 (s) Special Topics (1-16 credits)

Credit arranged

AGEC 505 (s) Professional Development (1-16 credits)

Credit arranged

AGEC 506 Faculty Seminar Series (0 credits)

Focus on current issues impacting agriculture, natural resources, and community development through seminars introducing research occurring in the department.

AGEC 525 Master's Econometrics (3 credits)

Multivariate linear regression and analysis of variance with economic applications. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 431 or equivalent; or Permission of Instructor.

AGEC 526 Master's Microeconomics Analysis (3 credits)

Master-level, calculus-based producer and consumer theory with selected managerial economics topics. Cooperative: open to WSU degree-seeking students. (Fall only)

Prereqs: Permission

AGEC 527 Mathematics for Economists (3 credits)

Mathematical methods applicable to economic analysis and research. Cooperative course available to WSU degree-seeking students. (Fall only)

Prereqs: ECON 352 and MATH 160 or MATH 170

AGEC 529 Research Methods (1-2 credits)

Social science Master's thesis as a research journey toward craftsmanship including elements of imagination, modeling, mindfulness, guidelines, and mentor experiences. Cooperative: open to WSU degree-seeking students.

Prereqs: Graduate standing and Permission

AGEC 532 Natural Resource Economics and Policy (3 credits)

Economic principles and models applied to natural resource problems, issues, and policies. Cooperative: open to WSU degree-seeking students. (Spring Only)

Prereqs: ECON 352 or Permission

AGEC 533 International Trade and Policy (3 credits)

International trade theories and policies and research issues related to world trade, with emphasis on agricultural commodity markets.

Cooperative: open to WSU degree-seeking students. (Spring Only)

Prereqs: ECON 446, AGEC 481, or Permission

AGED 534 Production Economics (3 credits)

Production economics theory and methods applied to problems of production response, economic optimization, technology, policy, risk and dynamics. Cooperative: open to WSU degree-seeking students.

Prereqs: AGEC 526 or Permission

AGED 535 Industrial Organization (3 credits)

Economic and strategic management theories and their relevance to agribusiness decision-making, including empirical applications. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

AGED 587 Regional Economic Development Methods (3 credits)

Methods course in the tools of regional economics and community development. Topics include Community Economic Profiling, Input-Output Analysis, Social Accounting, General Equilibrium Analysis, Social Benefit-Cost Analysis, and Non-Market Valuation. Cooperative: open to WSU degree-seeking students. (Fall only)

AGED 597 Applied Economics Teaching Practicum (1-3 credits)

Graded Pass/Fail. The teaching practicum is an opportunity for students to improve teaching methods and techniques, and expand professional skills under the guidance of mentors from the AERS faculty. The teaching practicum may include classroom lectures, demonstrations, grading assistance, or other related activities.

AGED 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Agricultural Education (AGED)

AGED 101 Verbal Communication in Agriculture, Food, and Natural Resources (3 credits)

General Education: Oral Communication

This course is designed to help students develop strategies and techniques for effective oral communication in professions related to agriculture, food, and natural resources (AFNR). Emphasis is placed on oral, visual, and interpersonal communication through an issues-based approach to AFNR topics. Typically Offered: Spring.

Prereqs: CALS or CNR major, or instructor permission required.

AGED 180 Introduction to Agricultural Education (1 credit)

Overview of the goals, mission, and purpose agricultural education programs in High Schools. Course content will include topics related to career opportunities in Agricultural Education, key issues facing agricultural education programs in high schools at the local, state, and national levels; the importance of agricultural education to society; and the role of the agricultural educator in schools and communities. (Fall only)

AGED 200 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: Permission.

AGED 204 (s) Special Topics (1-16 credits)

Credit arranged

AGED 251 Principles of Agricultural Communications and Leadership (3 credits)

This course prepares individuals to serve in leadership and communication roles in agriculture. Course topics will include an examination of the journalistic, communication and broadcasting principles to develop and disseminate agricultural information, along with leadership principles related to leadership theory and personal leadership development.

AGED 252 Developing Collegiate and Community Organizations (3 credits)

Assisting community, collegiate, or social organization members, officers, or committee chairs to better serve the organization and to acquire practical organizational and management skills that will help them throughout their academic and professional careers. Basic knowledge and skills related to parliamentary procedure and the orderly conduct of meetings will also be covered. (Alt/odd years)

AGED 258 Experiential Learning and SAE Programs (1 credit)

This course addresses the role of experiential learning in Agricultural Education programs. A sound understanding and application of these programs is essential to the success of the local program. The emphasis of the course will be to provide students with supervised experience in agriculture. Record keeping skills will be developed to assist the student in planning, decision-making, and reporting.

AGED 263 History of U.S. and World Agriculture (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

This course is an introduction to the history of agriculture around the world. The course will explore the beginnings of agriculture in the Fertile Crescent some 7,000 years ago and the expansion of agriculture to the far east, Europe, and all corners of the globe. Topics covered will include the development of crops and livestock systems, agricultural practices, land use and exploitation, experimentation, technological innovations, and the culture associated with agriculture in diverse countries. Typically Offered: Spring.

AGED 299 (s) Directed Study (1-16 credits)

Credit arranged

AGED 301 (s) Undergraduate Research (1-3 credits, max 3)

Undergraduate research for students in agricultural education.

Prereqs: Instructor Permission

AGED 350 Leadership Event Coordination (1-3 credits, max 6)

This course introduces students to the planning and implementation of leadership activities for the FFA - Career & Technical Student Organization. Students will use leadership, communications, and teambuilding skills to plan leadership and career development events (CDE/LDE), awards ceremonies, educational workshops, and stakeholder activities as part of the Idaho FFA State Convention (travel required). Students will collaborate with stakeholder groups including the Idaho FFA Association, Idaho FFA Alumni, Idaho FFA Foundation, Idaho Agriculture Teachers Association (IATA), and the Idaho Division of Career and Technical Education.

AGED 351 Career and Technical Education (3 credits)

Overview and interpretation of history, aims, and purposes of public education and career and technical education, issues and programs comprising education in Idaho and the U. S.

AGED 358 Supervising FFA and SAE Programs (3 credits)

Role of secondary agriculture instructors in supervising FFA and Supervised Agricultural Experience programs. One lecture and one 2-hour lab per week. (Fall only)

Prereqs: Agricultural Education major and Permission

Prereqs or Coreqs: AGED 180

AGED 359 Developing 4-H Youth Programs (3 credits)

This course provides participants with an overview of the planning, development, and leadership principles of a 4-H/Youth Development program, the role of the 4-H/Youth Development Extension Education, Program Coordinator, and volunteer leader.

AGED 398 (s) Internship (1-16 credits)**AGED 400 (s) Seminar (1-16 credits)**

Credit arranged

AGED 403 (s) Workshop (1-16 credits)

Credit arranged

AGED 404 (s) Special Topics (1-16 credits)

Credit arranged

AGED 405 (s) Professional Development (1-16 credits)

Credit arranged

AGED 406 Exploring International Agriculture (3 credits)

General Education: International

General overview of agriculture around the world and the opportunity to develop an in-depth knowledge of agriculture in a country or region of student's choice. Typically Offered: Fall.

Prereqs: Junior or Senior standing**AGED 407 Global Agricultural & Life Sciences Systems (3 credits, max 9)**

This course will introduce students to the history, culture, economy and agricultural systems of a selected foreign country emphasized through a planned short-term international field experience. Through study and travel to the select country, students will be exposed to the history of the country, important cultural sites, production agriculture field operations, agricultural business enterprises, and international agricultural markets. Students will participate in educational and pre-trip informational sessions along with post-trip debriefing, class discussions, completing reports and developing presentations for other CALS classes and clubs about their experience.

AGED 450 Leading People and Teams (3 credits)

Cross-listed with CLDR 450

Joint-listed with AGED 550

This course focuses on leadership and communication in groups and teams through an exploration of team-based leadership and shared visions. Students will develop a better understanding of themselves as leaders and followers and the role of others as leaders and followers within a community. Topics include: community-based models and theories related to effective groups and teams, processes of teams, team management, relationships in teams, creating a shared mission and vision amongst members, improving and evaluating team performance, determining leadership strategies based on team dynamics, and shared leadership. Recommended preparation: AGED 251

AGED 451 Communicating in Agriculture (3 credits)

Principles and practices of disseminating knowledge and information related to agricultural sciences, environment, and natural resources to clients and the general public; communications concepts, technology, and presentation skills that will help agricultural and natural resource professionals communicate effectively within their chosen profession.

AGED 452 Methods of Teaching Agriculture (4 credits)

Procedures of identifying and selecting instructional methods and materials, planning, and student evaluation criteria to effectively teach agriculture. (Fall only)

Prereqs: AGED 180, Agricultural Education major, and Permission**Prereqs or Coreqs:** AGED 358**AGED 453 Program Planning in Secondary Agricultural Education (3 credits)**

Planning, organizing, and implementing secondary programs in agriculture. This course is to be taken during the student teaching semester. (Spring only)

Prereqs: AGED 452, Agricultural Education major, and Permission**AGED 454 Facilities Organization and Management (2 credits)**

Applications of efficient planning, organizing, and teaching skills reqd in management of lab and shop facilities.

Prereqs: AGED 180, Agricultural Education major, and Permission**Prereqs or Coreqs:** AGED 358**AGED 460 Practicum: Secondary School Teaching in Agriculture (10 credits)**

Fifteen weeks of practical experience student teaching in a secondary agriculture program. (Spring only)

Prereqs: Admission to the Teacher Education Program and Permission**AGED 461 Student Teaching Portfolio (3 credits)**

Summary of the 15-week practicum experience; a notebook portfolio to include unit lesson plans, daily teaching plans, video example of teaching, report of early field experience, daily journal, summary of 10 positive and 10 challenging teaching experiences, supervisory assessments of teaching by cooperating instructor and university supervisor, and cooperating teacher's final evaluation. (Spring only)

AGED 470 Proseminar in Agricultural Education (1 credit)

Professional issues in agricultural education. Fall semester includes additional 8-hour Saturday session for CPR and first aid training.

Prereqs: Admission to Teacher Education Program, or Permission of department**AGED 471 Senior Capstone in Agricultural Education (2 credits)**

General Education: Senior Experience

This course serves as the senior capstone course for the B. S. in Agricultural Education. The course meetings will include 2 mandatory seminars (2 days each), a final presentation, and a senior capstone debriefing meeting at the end of the student-teaching field-experience.

Prereqs: AGED 470**Coreqs:** AGED 460 and AGED 461**AGED 481 Advanced Agricultural Communication and Leadership (3 credits)**

This course is a culmination of the comprehensive knowledge gained in agricultural communications and leadership that infuses reflection with a real-life application of learned tools and skills. Designed for students to engage with a community organization or business to complete a full organizational analysis and design a communications campaign. The course results in the development of a portfolio.

Prereqs: AGED 251, AGED 450, AGED 451**AGED 498 (s) Internship (1-10 credits, max 10)**

General Education: Senior Experience

Formalized learning experience in an actual work setting. Students work in an agriculturally related organization or agency and commit to a minimum of 40 hours of supervised work per semester credit. Requires completion of a formal proposal.

Prereqs: Junior or Senior standing; GPA of 2.75 and Permission**AGED 499 (s) Directed Study (1-16 credits)**

Credit arranged

AGED 500 Master's Research & Thesis (1-16 credits)

Credit arranged

AGED 501 (s) Seminar (1-16 credits)

Credit arranged

AGED 502 (s) Directed Study (1-16 credits)

Credit arranged

AGED 503 (s) Workshop (1-16 credits)

Credit arranged

AGED 504 (s) Special Topics (1-16 credits)

Credit arranged

AGED 505 (s) Professional Development (1-16 credits)

Credit arranged

AGED 550 Leading People and Teams (3 credits)

Joint-listed with AGED 450, CLDR 450

This course focuses on leadership and communication in groups and teams through an exploration of team-based leadership and shared visions. Students will develop a better understanding of themselves as leaders and followers and the role of others as leaders and followers within a community. Topics include: community-based models and theories related to effective groups and teams, processes of teams, team management, relationships in teams, creating a shared mission and vision amongst members, improving and evaluating team performance, determining leadership strategies based on team dynamics, and shared leadership. Recommended preparation: AGED 251

AGED 560 Beginning Teacher Induction in Agricultural Education I (1 credit)

This course is designed to develop an understanding and application of teaching agriculture using the three-circle model. The course is taught using on-site clinical supervision, technical assistance, leadership, follow-up and support to beginning teachers of secondary agricultural education program. (Fall only)

AGED 561 Beginning Teacher Induction in Agricultural Education II (1 credit)

This course is designed to develop an understanding and application of teaching agriculture using the three-circle model. The course is taught using on-site clinical supervision, technical assistance, leadership, follow-up and support to beginning teachers of secondary agricultural education program. (Spring only)

AGED 562 Instructional Methods in Agricultural Education (3 credits)

Innovations and advanced principles in teaching methods and materials.

AGED 563 History and Philosophy of Agricultural and Extension Education (3 credits)

This course will review the development and growth of land-grant universities, agricultural experiment stations, the cooperative extension system, secondary and post-secondary agricultural programs, and the 4-H and FFA youth development organizations. Participants will conduct historical research and prepare a historical research manuscript for publication.

AGED 564 Curriculum Development in Agricultural Education (3 credits)

Design and development of data based curriculum and curriculum evaluation procedures in agricultural and extension education. Critique of curriculum development models, contemporary trends and issues, curriculum resources and accountability tools. Analysis of the use of national and state standards as well as local community needs in curriculum development

AGED 565 Program Planning and Evaluation in Agricultural Education (3 credits)

This course is designed to develop an understanding of Program Planning and Evaluation relevant to secondary agricultural education. Theories of program planning, evaluation principles, models, and procedures used in developing and analyzing agricultural education programs, conducting needs assessments, and the marketing of outcomes to major stakeholders

AGED 566 Advanced Philosophies of Teaching & Learning in Agricultural Education (3 credits)

Foundations and theories of teaching and learning with emphasis on applications in the secondary agricultural education classroom. Emphasis will be placed upon behavioral, social cognitive, cognitive, information processing, brain-based, constructivist, developmental, motivational, and transformational theories as they apply in contemporary agricultural education settings. Advanced teaching methods and pedagogies based on researched best-practices.

AGED 598 (s) Internship (1-16 credits)

Credit arranged

AGED 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Agricultural Systems Mgt (ASM)

ASM 107 Beginning Welding (3 credits)

Principles of operation, use, and care of arc and acetylene welding equipment. One lecture, one 2-hour lab, and two hours of individual practice per week. Enrollment limited to 12 per section. Cooperative: open to WSU degree-seeking students.

ASM 112 Introduction to Agricultural Systems Management (3 credits)

Application of basic engineering principles to solving problems dealing with farm machinery, buildings, processing, irrigation, and energy use. Recommended Preparation: high school algebra.

ASM 200 (s) Seminar (1 credit, max arranged)**ASM 202 Agricultural Shop Practices (3 credits)**

Primarily for agricultural systems management and agricultural education students. Operation, use, and care of shop tools and equipment. One lecture, one 3-hour lab, and two hours of individual practice per week.

ASM 204 (s) Special Topics (1-16 credits)

Credit arranged

ASM 210 Small Engines (3 credits)

Principles of engine operation, tune-up, and maintenance; repair and overhaul of small engines. One lecture, one 2-hour lab, and two hours of individual practice per week. Enrollment limited to 12 per section.

ASM 240 Computer Applications in Biophysical Systems (3 credits)

This course is designed as an introductory course to computer applications with specific emphasis on applications used in agriculture and life sciences. Content includes spreadsheet management, database management, data analysis, data visualization, and presentation applications. Recommended preparation: three credits of college math. Two lectures and one 2-hour lab per week.

ASM 299 (s) Directed Study (1-16 credits)

Credit arranged

ASM 305 GPS and Precision Agriculture (3 credits)

This course will cover the fundamentals of global positioning, yield monitors, and variable rate applications. Instrumentation used in agriculture, environmental science, and industry will be discussed. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

ASM 315 Irrigation Systems and Water Management (3 credits)

Irrigation methods, irrigation management, water rights, conveyance and measurement, pumps, soil-water-plant relationships, and drainage. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

Prereqs: SOIL 205, MATH 108, MATH 143, MATH 160 or MATH 170 or Permission

ASM 331 Electric Power Systems for Agriculture (3 credits)

Basic circuits; wiring and the code; motors and controls; heating, lighting, and power. Two lectures and one 3-hour lab a week. Cooperative: open to WSU degree-seeking students.

ASM 398 (s) Internship (1-6 credits, max 6)

Graded P/F.

Prereqs: Permission

ASM 400 (s) Seminar (1-16 credits)

Credit arranged

ASM 403 (s) Workshop (1-16 credits)

Credit arranged

ASM 404 (s) Special Topics (1-16 credits)

Credit arranged

ASM 405 Precision Agriculture Science and Technology (3 credits)

This course focuses on the operation, application, and calibration of current agricultural equipment technologies used in the digital and precision agriculture industry including precision sprayer application, row/section/nozzle control, air drills, crop yield/quality monitors, proximal crop/soil sensing, in-situ environmental sensors, and data control/storage/communication.

Prereqs: MATH 143

ASM 407 Advanced Welding (1 credit)

This course provides the student an opportunity to learn various advanced welding theories, practices and applications for ferrous and non-ferrous metals, which include Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW) and Plasma Arc Cutting (PAC). These are only introduced in ASM 107, Beginning Welding, and will be covered in depth in this course. This course will also provide the student with a technical understanding of calculating material and use of proper procedures for the completion of project manufactured in the lab. Student presentations and demonstrations are required. This course will introduce emerging technologies in welding and fabrication industries.

Prereqs: ASM 107 and Permission

ASM 409 Agricultural Tractors, Power Units and Machinery Management (4 credits)

This course focuses on the selection, operation, adjustment, and servicing of farm tractors and power units. Fuels, lubrication, cooling, and electrical systems will also be covered. Machinery operation, power transmission systems, hitching, traction, and safety are also discussed. The course will conclude with discussions on depreciation and machinery replacement. Three 1-hour lectures and one 3-hour lab a week.

ASM 476 Remote Sensing Application with Unmanned Aerial Systems (UAS) (3 credits)

Cross-listed with REM 475

This course introduces students to the fundamental components of UAS, sensors and platforms, UAS operational concepts, the principles of UAS data collection, the legal framework for UAS operations, photogrammetric theory, image processing software, and the generation and analysis of orthomosaics and 3D point clouds. The course emphasizes the use of UAS in the context of natural resource science, technology and applications. Typically Offered: Varies.

Prereqs: FOR 375 or equivalent

ASM 498 (s) Internship (1-6 credits, max 6)

Graded P/F.

Prereqs: Permission

ASM 499 (s) Directed Study (1-16 credits)

Credit arranged

American Indian Studies (AIST)

AIST 101 Elementary Nez Perce I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing

Cross-listed with NEZP 101

Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.

AIST 102 Elementary Nez Perce II (4 credits)

Cross-listed with NEZP 102

Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar. Typically Offered: Varies.

Prereqs: AIST 101

AIST 110 Community Building (1 credit)

This course is aimed towards first generation college students from indigenous communities. This course helps students build community support through existing programs at the university and facilitates students' connections with their tribal cultures. It also helps students develop good study habits and build study skills.

AIST 111 Intro to Success (1 credit)

This course assists each student's academic, cultural, and social adjustment to the University. The course is also designed to provide supportive tools and resources to each student to ensure they are maximizing their ability. The course will focus on a few of the topic areas: time management, organization skills, tribal issues and tribal governmental structures, importance of diversity, learning styles, budgeting, and test taking.

AIST 204 (s) Special Topics (1-16 credits)

Credit arranged

AIST 210 Native Identities (3 credits)

This course is intended to develop a dynamic modern understanding of indigenous communities and self. The class will focus on such themes as family, history, blood & kinship, colonization, treaty rights and sovereignty, land and linguistics.

AIST 298 Tribal Natural Resource Internship (1-4 credits)

This course is a supervised internship in an Indian community setting that provides work experience and learning opportunities in natural resource ecology and management. The course requires the development of a formal plan of activities and learning goals that must be approved by the onsite supervisor and faculty instructor.

AIST 316 American Indian History (3 credits)

General Education: American Diversity

Cross-listed with HIST 316

Course investigates Indigenous people in North America from time immemorial to present. Emphasizes Native American resilience and adaptability in the face of colonialism.

AIST 320 Native American & Indigenous Film (3 credits)

General Education: American Diversity

Examines the representation of American Indians in film from early-mid 20th century Hollywood westerns to self representations of late 20th and early 21st century films made by Native Americans. Traces changes in the cinematic depictions of Native peoples and historical and cultural reasons for those changes. Emphasizes Native-made film as extension of oral tradition, indigenous aesthetics, and sovereignty. May include international Indigenous films.

AIST 329 Contemporary North American Indians (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

Cross-listed with ANTH 329

Histories, cultures, and practices of contemporary North American Indians.

AIST 400 (s) Seminar (1-16 credits)

Credit arranged

AIST 403 (s) Workshop (1-16 credits)

Credit arranged

AIST 404 (s) Special Topics (1-16 credits)

Credit arranged

AIST 411 Native American Architecture (3 credits)

General Education: American Diversity

An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

AIST 422 Contemporary Pacific Northwest Indians (3 credits)

General Education: American Diversity

This course is intended to impart an understanding of the vitality and rich diversity of contemporary Pacific Northwest American Indian societies, their histories, and their literatures, e. g. , in the arts and expressive culture, in governmental affairs both indigenous and external, in economics, ecological relations and natural resources, in health care, and in family, social and religious life, in oral traditions, in world views and cultural values. This understanding is inclusive of both indigenous cultural, as well as contact-historical, expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome. ANTH 422 is cooperative: open to WSU degree-seeking students.

AIST 435 (s) Tribal Elders Series (3 credits, max 9)

Cross-listed with ANTH 321

Elders from neighboring tribes surrounding the University of Idaho will share a tribal epistemology that each tribe considers to be essential to an education of an adult. Such educational perspective may often be missing/misrepresented or misunderstood in current university pedagogy. This class will place an emphasis on contemporary indigenous voices. This course will have a subtopic heading to incorporate the possibility of having many neighboring tribes participate. Typically Offered: Fall.

AIST 445 Indigenous Ways of Knowing (3 credits)

Cross-listed with ANTH 545

The course is intended as an introduction to issues of cultural, racial, ethnic and linguistic diversity that arise in American school and society. In particular we will be looking at indigenous epistemological comparison with Western educational models. The central question for the course will be: Why is educational attainment different for different groups in society, and how does that difference relate to social stratification characteristics of the larger society? We will also try to answer other questions: What is the impact of cultural and linguistic diversity on the various institutions of society, including family, schools, and the economic system? What policies and programs have been developed in the US and other societies to deal with cultural diversities? These and other questions will be the basis for our reading and discussions Typically Offered: Fall.

AIST 453 Tribal Sovereignty and Federal Policy (3 credits)

Cross-listed with ANTH 314

This course provides an in-depth understanding of how colonial and Federal Indian Policies have impacted the lives of Tribes and their surrounding communities. Through a survey of the changing eras of policy (conquest, preRevolutionary approaches, the Marshall Trilogy, the Treaty Era, Allotment and Termination, and Self-Determination), students will learn about the forces that have shaped tribal communities, and a deeper appreciation for tribes' efforts to restore and exercise their sovereignty. Tribal Sovereignty as it applies to land management, natural resources and community development will be a focal area. Typically Offered: Spring.

AIST 484 Native American and Indigenous Literature (3 credits)

General Education: American Diversity

Cross-listed with ENGL 384

Significant texts, topics and traditions of American Indian, First Nations, and Indigenous writings in their literary and historical contexts, including the social and political circumstances out of which they arise. Emphasis on North America. Typically Offered: Varies.

Prereqs: ENGL 102**AIST 498 (s) Internship (1-16 credits)**

Credit arranged Supervised internship in an Indian community setting, integrating academic study with work experience; requires formal plan of activities to be approved by the on site supervisor and assigned faculty member; a final written report will be evaluated by the assigned faculty member.

Prereqs: Permission**AIST 499 (s) Directed Study (1-16 credits)**

Credit arranged

American Studies (AMST)

AMST 200 (s) Seminar (1-16 credits)

Credit arranged

AMST 203 (s) Workshop (1-16 credits)

Credit arranged

AMST 204 (s) Special Topics (1-16 credits)

Credit arranged

AMST 299 (s) Directed Study (1-16 credits)

Credit arranged

AMST 301 Studies in American Culture (3 credits)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

In-depth exploration of a significant theme or issue in American society from a variety of disciplinary perspectives; specific focus may vary, but includes consistent incorporation of a historical dimension, attention to inequalities and diversity, and analysis of aspects of contemporary American culture including a global context. Typically Offered: Fall and Spring.

Prereqs: ENGL 102; Junior standing or Permission

AMST 400 (s) Seminar (1-16 credits)

Credit arranged

AMST 403 (s) Workshop (1-16 credits)

Credit arranged

AMST 404 (s) Special Topics (1-16 credits)

Credit arranged

AMST 499 (s) Directed Study (1-16 credits)

Credit arranged

Animal and Veterinary Science (AVS)

AVS 109 The Science of Animals that Serve Humanity (4 credits)

Role of animal agriculture in providing food, work, and pleasure for mankind; intro to animal genetics, physiology, endocrinology, nutrition, and other disciplines essential for an understanding of the contributions of animals in the expanding human population.

AVS 110 Science of Animal Husbandry (3 credits)

Fundamental concepts of animal husbandry and its foundation in the science of animal production; introduction to the technical subject matter of animal production. Typically Offered: Spring.

AVS 110L Science of Animal Husbandry Lab (1 credit)

Laboratory to support teaching in AVS 110; introductory applications of fundamentals of animal science to domestic animal management and production. One 2-hr lab a week. Typically Offered: Spring.

Prereqs or Coreqs: AVS 110

AVS 172 Principles and Practices of Dairy Science (2 credits)

An overview of the dairy industry and the science of producing milk and reproduction, udder health and mastitis, milk marketing, and dairy product quality and safety; approved management practices for dairy enterprise.

AVS 204 (s) Special Topics (1-16 credits)

Credit arranged

AVS 222 Animal Reproduction and Breeding (3 credits)

Provides fundamental information about reproduction, lactation, and breeding of domestic animals; topics include functional anatomy, basic physiology, and endocrinology relating to reproduction and lactation; animal breeding involves the mathematical and conceptual framework of genetic evaluation.

AVS 263 Live Animal and Carcass Evaluation (3 credits)

Evaluation and selection of cattle, sheep, and swine for herd replacement; evaluation of market animals; carcass evaluation and grading, slaughter procedures, and factors that affect quality and quantity of meat; visual and objective appraisals. One lecture and two 3-hour lab per week; four 1-day and four 1/2-day field trips or equivalent time. Cooperative: open to WSU degree-seeking students.

AVS 267 Anatomy and Physiology of Domestic Animals (3 credits)

Study of domestic animal anatomy and physiology from a systems perspective. Cooperative: open to WSU degree-seeking students.

Prereqs: AVS 109, BIOL 115 and BIOL 115L

AVS 268 Companion Animal Diseases (2 credits)

Principles of disease resistance, transmission, and prevention; clinical signs, pathogenesis, and control of major diseases in companion animals. Recommended preparation: AVS 222 or equivalent.

Prereqs: AVS 109

AVS 274 Beef Feedlot Systems (2 credits)

Overview of feeding management, feed milling and batching, animal health, and economics of the commercial cattle feeding business.

Prereqs: AVS 109

Coreqs: AVS 110

AVS 298 (s) Internship (1-16 credits)

Credit arranged

AVS 299 (s) Directed Study (1-6 credits, max 6)

Graded P/F.

Prereqs: Permission of department

AVS 301 Undergraduate Research in Animal Science (1-3 credits, max 6)

Undergraduate research related to animal and veterinary science. Graded P/F.

AVS 305 Animal Nutrition (4 credits)

Introduction of the concepts and principles of animal nutrition; fundamentals of nutrients and their digestion and metabolism; various biochemical pathways and processes for nutrient utilization; nutrition fundamentals for a range of monogastric and ruminant animals. Recommended Preparation: BIOL 115 and BIOL 115L, and CHEM 111 and CHEM 111L, or CHEM 101 and 101L, and CHEM 275 or CHEM 277. Typically Offered: Fall.

Prereqs: AVS 109

AVS 306 Feeds & Ration Formulation (3 credits)

Application of principles of nutrition to ration formulation for poultry and livestock; evaluating feedstuffs for use in ration formulation. AVS majors must also take AVS 306L. Typically Offered: Spring.

Prereqs: AVS 305 Cooperative: open to WSU degree-seeking students.

AVS 306L Feeds and Ration Formulation Laboratory (1 credit)

Laboratory to support instruction in AVS 306; Application of ration formulation for poultry and livestock as it applies to the principles of animal nutrition; evaluation of feedstuffs for use in ration formulation. One 2-hour lab per week. Co-requisite for AVS majors - AVS 306.

Recommended Preparation: AVS 305. Cooperative: open to WSU degree-seeking students.

AVS 317 Artificial Insemination and Pregnancy Detection (3 credits)

Anatomy and physiology of pregnant and non-pregnant reproductive systems; artificial insemination; male reproduction; pregnancy detection in domestic livestock.

Prereqs: AVS 109; and AVS 222 or AVS 452, Junior/Senior Standing OR instructor permission

AVS 318 Beef Calving Management (1 credit)

Increase student's knowledge and experience of the biology, physiology and management of cows and calves before, during and after the birthing process.

Prereqs: AVS 109 and AVS 110

AVS 330 Genetics of Livestock Improvement (3 credits)

Genetic principles applied to breeding of farm animals. This is a cooperative course available to WSU degree-seeking students.

Prereqs: AVS 109

AVS 363 Animal Products for Human Consumption (4 credits)

Cross-listed with FS 363

The meat, dairy, and egg industries, including product produced, processed, safety (HACCP), nutrition, distribution, quality, quantity, palatability, health, cooking, home storage, and consumer concerns. Special clothing and equipment required. Three lecture credits and one 3-hour lab per week. Recommended Preparation: BIOL 115, BIOL 115L. Cooperative: open to WSU degree-seeking students.

AVS 371 Anatomy and Physiology (3 credits)

Structure and function of tissues and organ systems of domestic and wild animals.

Prereqs: BIOL 115, BIOL 115L

AVS 373 Anatomy and Physiology Lab (1 credit)

Students will perform dissections and examine the relationship between the organization of tissues and their distinct function within the animal. Field trips may be incorporated should teaching opportunities arise though most instruction will be confined to the Physiology and Anatomy laboratory and classroom. (Fall only)

Prereqs: AVS 109, BIOL 115, BIOL 115L and Animal and Veterinary Science major

Coreqs: AVS 371

AVS 398 (s) Internship (1-16 credits, max arranged)

Credit arranged. Cooperative programs with producers, allied industry and food processing industries within the state. Graded Pass/Fail.

Prereqs: Permission

AVS 404 (s) Special Topics (1-16 credits)

Credit arranged

AVS 405 (s) Professional Development (1-16 credits)

Credit arranged

AVS 411 Ruminant Nutrition (3 credits)

Joint-listed with AVS 511

Intro to anatomy of digestive tract of ruminant; focus on ruminal and post-ruminal carbohydrate, protein, and lipid metabolism; ruminal bacteria, protozoa and fungi, microbe-microbe interactions and their role in nutrients utilization; compartmentation of the rumen and microbial protein synthesis; practical aspects of ruminant nutrition and intro to current feeding systems; research techniques in studying ruminal degradation and digesta kinetics. Additional projects/assignments required for graduate credit. (Alt/yrs)

Prereqs: Permission

AVS 450 Issues in Animal Agriculture (2 credits)

General Education: Senior Experience

The capstone experience for seniors in AVS; students will present information on selected topics and propose solution to current problems; emphasis on problem solving using integration of information across disciplines.

Prereqs: Senior standing

AVS 452 Physiology of Reproduction (4 credits)

Physiology of reproduction; growth, structure, development, endocrinology, and control of reproductive function with emphasis on farm animals. Three lecture and one 2-hour lab a week. Cooperative: open to WSU degree-seeking students.

Prereqs: AVS 109 and BIOL 115 and BIOL 115L or equivalent

AVS 463 Growth and Lactation (3 credits)

Joint-listed with AVS 563

Principles of animal growth and lactation. Hormonal, nutritional, and metabolic control of bone, muscle, adipose, and mammary tissue development; regulation of lactation. Additional work required for graduate credit. Typically Offered: Fall.

Prereqs: AVS 109 and AVS 267 or AVS 371 or BIOL 227

Coreqs: AVS 305 Cooperative: open to WSU degree-seeking students

AVS 466 Equine Science and Management (3 credits)

Study of the industry as well as basic principles of equine science and management, including conformation and selection, anatomy, form to function, nutrition and feeding, behavior, health, reproduction, marketing, facilities and business management. Two lectures and one 2-hour lab per week. Cooperative: open to WSU degree-seeking students.

Prereqs: Junior standing and AVS 222, AVS 371 and AVS 305 or Permission

AVS 471 Animal Disease Management (3 credits)

Principles of immunity and disease resistance, transmission, and prevention; clinical signs, pathogenesis, and control of major diseases of economic importance in domestic animals.

Prereqs: Junior standing

AVS 472 Dairy Cattle Management (3 credits)

Establishing a dairy farm, housing and managing large dairy herds, selection of breeding cattle, and marketing quality milk. One 4-day field trip. Recommended Preparation: AVS 222 or equivalent. Cooperative: open to WSU degree-seeking students.

Prereqs: AVS 109

Coreqs: AVS 305

AVS 474 Beef Cattle Science (3 credits)

Breeding, feeding, and management; commercial and purebred enterprises; management of beef cattle on ranges, pasture, and in the feedlot. One 1-day field trip. Recommended Preparation: AVS 222 or equivalent. Typically Offered: Spring.

Prereqs: AVS 305

AVS 475 Advanced Dairy Management (3 credits)

Application of concepts of dairy cattle management to practical situations. One lecture and 1-2 hours of lab per week. Recommended Preparation: AVS 472. Cooperative: open to WSU degree-seeking students.

Prereqs: AVS 305

Coreqs: AVS 306 or AVS 411

AVS 476 Sheep Science (3 credits)

Application of principles of genetics, reproduction, nutrition, health, and marketing to the management of commercial and purebred sheep; new developments related to sheep industry; production, evaluation, and use of wool. Two lectures and one 2-hour lab per week; one 1-day field trip or equivalent time. Recommended Preparation: AVS 222 or equivalent. Cooperative: open to WSU degree-seeking students.

Prereqs: AVS 109

AVS 498 (s) Internship (1-16 credits)

Credit arranged

AVS 499 (s) Directed Study (1-6 credits, max arranged)**AVS 500 Master's Research and Thesis (1-16 credits)**

Credit arranged

AVS 501 (s) Seminar (1-16 credits)

Credit arranged

AVS 502 (s) Directed Study (1-16 credits)

Credit arranged Graded P/F.

Prereqs: Permission

AVS 503 (s) Workshop (1-16 credits)

Credit arranged

AVS 504 (s) Special Topics (1-16 credits)

Credit arranged

AVS 505 (s) Professional Development (1-16 credits)

Credit arranged

AVS 511 Ruminant Nutrition (3 credits)

Joint-listed with AVS 411

Intro to anatomy of digestive tract of ruminant; focus on ruminal and post-ruminal carbohydrate, protein, and lipid metabolism; ruminal bacteria, protozoa and fungi, microbe-microbe interactions and their role in nutrients utilization; compartmentation of the rumen and microbial protein synthesis; practical aspects of ruminant nutrition and intro to current feeding systems; research techniques in studying ruminal degradation and digesta kinetics. Additional projects/assignments required for graduate credit. (Alt/years)

Prereqs: Permission

AVS 517 Macronutrient Metabolism (3 credits)

Upon completion of this class students will be familiarized with many aspects of digestion, absorption and metabolism of macronutrients in a detailed level. The emphasis will be on interrelationship and regulation of macronutrients utilization at cellular and organ levels. It is assumed that graduate students have a good knowledge of physiology and biochemistry. Pertinent research manuscripts will be discussed in a round-table fashion.

Prereqs: AVS 305, or AVS 411, or similar course

AVS 531 Practical Methods in Analyzing Animal Science Experiments (3 credits)

Upon completion of this class students will be able to manage and analyze data obtained from animal experimentations. This is a "hands-on" type of training, specifically designed for AVS graduate students and intends to provide our graduate students with a better understanding of designs commonly used in animal science experiments, advantages and potential pitfalls associated with each design, data processing and analysis, data tabulation, and graphic illustration, and data interpretation.

Prereqs: 400-level statistics course

AVS 550 Critical Evaluation of Scientific Research (2 credits)

Students will learn how to critically evaluate scientific literature, develop an understanding of current molecular biology, biotechnology, genomics and/or genetics techniques and strategies employed in the fields of biology and animal science, and develop scientific writing skills. Graded P/F.

AVS 555 Environmental Physiology of Livestock (2 credits)

Discusses fundamental and advanced concepts related to physiological interactions of livestock with their environment and adaptation of animals to changing environmental conditions. Course is largely discussion-based, with a focus on current topics and research. Typically Offered: Fall.

Prereqs: 200-level or higher Anatomy & Physiology Cooperative: open to WSU degree-seeking students.

AVS 563 Growth and Lactation (3 credits)

Joint-listed with AVS 463

Principles of animal growth and lactation. Hormonal, nutritional, and metabolic control of bone, muscle, adipose, and mammary tissue development; regulation of lactation. Additional work required for graduate credit. Typically Offered: Fall.

Coreqs: AVS 305 Cooperative: open to WSU degree-seeking students

AVS 567 Advanced Physiology (4 credits)

An advanced review of physiology designed to emphasize the interaction between structure and function of specialized cells, tissues, organs and systems. The systems to be covered will include but are not limited to, the mammalian cell, hematology neurophysiology, muscle physiology, cardiovascular physiology, pulmonary physiology, renal physiology and whole animal metabolism. Recommended preparation: undergraduate physiology, biology, cell biology, and/or biochemistry. (Spring, alt/odd yrs)

AVS 597 (s) Practicum (1-16 credits)

Credit arranged

AVS 598 (s) Internship (1-16 credits)

Credit arranged

AVS 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

AVS 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Animal, Veterinary, and Food Sciences (AVFS)

AVFS 101 Introduction to Animal, Veterinary and Food Sciences (1 credit)

An overview of animal, veterinary and food sciences for first year AVFS students. An introduction of programs, courses, and facilities, including weekly faculty speakers, activities, discussions, and presentations of topics concerning issues facing animal, veterinary, and food scientists. Cooperative: open to WSU degree-seeking students.

AVFS 204 (s) Special Topics (1-16 credits, max 99)

Credit arranged Typically Offered: Varies.

AVFS 435 Fish Genetics (2 credits)

Joint-listed with AVFS 535

This course will cover most aspects of qualitative, quantitative, chromosomal and ecological aspects of fish genetics with emphasis on applications to aquaculture and fisheries management. Six major areas will be covered: 1) Inheritance of Qualitative/Quantitative Traits in Fish, 2) Selection, Breeding and Hybridization 3) Genetic Markers and Their Applications, 5) Cytogenetics of Fish Reproduction and Sex Control 6) Introduction to Gene Engineering and Genomics. A writing assignment is mandatory for graduate credit. Typically Offered: Spring.

Prereqs: BIOL 115 and 115L or equivalent

AVFS 503 (s) Workshop (1-16 credits)

Credit arranged

AVFS 535 Fish Genetics (2 credits)

Joint-listed with AVFS 435

This course will cover most aspects of qualitative, quantitative, chromosomal and ecological aspects of fish genetics with emphasis on applications to aquaculture and fisheries management. Six major areas will be covered: 1) Inheritance of Qualitative/Quantitative Traits in Fish, 2) Selection, Breeding and Hybridization 3) Genetic Markers and Their Applications, 5) Cytogenetics of Fish Reproduction and Sex Control 6) Introduction to Gene Engineering and Genomics. A writing assignment is mandatory for graduate credit. Typically Offered: Spring.

Anthropology (ANTH)

ANTH 100 Introduction to Anthropology (3 credits)

General Education: Social and Behavioral Ways of Knowing
Basic theories, methods, and findings of human paleontology, prehistory, and culture. Typically Offered: Fall, Spring and Summer.

ANTH 101 Biological Anthropology (3 credits)

General Education: Social and Behavioral Ways of Knowing
Evidence for primate and human evolution; processes of human variation and adaptation; techniques of biological anthropology; human population biology. Typically Offered: Fall and Spring.

ANTH 102 Cultural Anthropology (3 credits)

General Education: Social and Behavioral Ways of Knowing
Explores the global diversity of cultures and the variety of ways humans organize and understand their world Typically Offered: Fall and Spring.

ANTH 103 Introduction to Archaeology (3 credits)

Archaeological techniques for interpreting past lifeways from material remains; includes both prehistoric and historical archaeology.

ANTH 200 (s) Seminar (1-16 credits)

Credit arranged

ANTH 203 (s) Workshop (1-16 credits)

Credit arranged

ANTH 204 (s) Special Topics (1-16 credits)

Credit arranged

ANTH 241 Introduction to the Study of Language (3 credits)

Cross-listed with ENGL 241 and EDCI 241
Surveys of sound patterns, morphological processes, and syntactic structures; questions of language acquisition, variation, and history; exercises from a variety of languages, with emphasis on American English.

ANTH 261 Language and Culture (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Language as an aspect of culture; the relation of habitual thought and behavior to language.

ANTH 299 (s) Directed Study (1-16 credits)

Credit arranged

ANTH 314 Tribal Sovereignty and Federal Policy (3 credits)

Cross-listed with AIST 453

This course provides an in-depth understanding of how colonial and Federal Indian Policies have impacted the lives of Tribes and their surrounding communities. Through a survey of the changing eras of policy (conquest, preRevolutionary approaches, the Marshall Trilogy, the Treaty Era, Allotment and Termination, and Self-Determination), students will learn about the forces that have shaped tribal communities, and a deeper appreciation for tribes' efforts to restore and exercise their sovereignty. Tribal Sovereignty as it applies to land management, natural resources and community development will be a focal area. Typically Offered: Spring.

ANTH 321 (s) Tribal Elders Series (3 credits, max 9)

Cross-listed with AIST 435

Elders from neighboring tribes surrounding the University of Idaho will share a tribal epistemology that each tribe considers to be essential to an education of an adult. Such educational perspective may often be missing/misrepresented or misunderstood in current university pedagogy. This class will place an emphasis on contemporary indigenous voices. This course will have a subtopic heading to incorporate the possibility of having many neighboring tribes participate. Typically Offered: Fall.

ANTH 327 Belief Systems (3 credits)

Cross-listed with RELS 327

Method and theory of comparative anthropological study of religion.

ANTH 329 Contemporary North American Indians (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing
Cross-listed with AIST 329
Histories, cultures, and practices of contemporary North American Indians.

ANTH 350 Food, Culture, and Society (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing
Cross-listed with SOC 350

Examines the structural and cultural implications of eating and producing food in a global world. Utilizing a social scientific framework, it explores the history of particular foods and examines how food systems are racialized, classed and gendered. Primary foci include the social history of food holidays and taboos, the relationships between food and identity, the impact of agricultural production practices on food systems and food security, and forms of resistance to these impacts. Recommended Preparation: a 200-level sociology course. May include field trips. Typically Offered: Spring (Even Years).

Prereqs: SOC 101

ANTH 400 (s) Seminar (3 credits)

Credit arranged

ANTH 403 (s) Workshop (1-16 credits)

Credit arranged

ANTH 404 (s) Special Topics (1-16 credits)

Credit arranged

ANTH 409 Anthropological Field Methods (1-8 credits, max 8)

Field training in archaeology and/or social anthropology.

ANTH 411 Human Evolution (3 credits)

Joint-listed with ANTH 511

Human origins in light of the fossil record and evolutionary theory. Additional projects/assignments required for graduate credit. Recommended Preparation: ANTH 100. Cooperative: open to WSU degree-seeking students.

ANTH 416 Qualitative Social Science Methods (3 credits)

Cross-listed with SOC 416

Joint-listed with ANTH 516

This course introduces students to social science research methods that collect qualitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit. Typically Offered: Varies.

Prereqs: SOC 101 or ANTH 100

ANTH 417 Social Data Analysis (3 credits)

Cross-listed with SOC 417

Joint-listed with ANTH 517

This course introduces students to social science research methods that collect quantitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit.

Prereqs: SOC 101; STAT 251

ANTH 420 Anthropological History and Theory (3 credits, max 9)

Historical development of anthropology along with theoretical debates as presented in the anthropological literature.

Prereqs: Upper-Division standing

ANTH 422 Contemporary Pacific Northwest Indians (3 credits)

General Education: American Diversity

Cross-listed with AIST 422, RELS 422

Joint-listed with ANTH 522

This course is intended to impart an understanding of the vitality and rich diversity of contemporary Pacific Northwest American Indian societies, their histories, and their literatures, e. g. , in the arts and expressive culture, in governmental affairs both indigenous and external, in economics, ecological relations and natural resources, in health care, and in family, social and religious life, in oral traditions, in world views and cultural values. This understanding is inclusive of both indigenous cultural, as well as contact-historical, expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome. ANTH 422 is cooperative: open to WSU degree-seeking students.

Cooperative: open to WSU degree-seeking students.

ANTH 425 Popular Culture and Consumerism (3 credits)

Joint-listed with ANTH 525

An interdisciplinary survey of the contemporary study of popular culture. Reviews contemporary theoretical approaches to mass, popular, folk, and fan cultures using material culture, texts, media, and cultural practices. Focus on critical analysis and understanding the significance of popular culture to society and how its consumption shapes everyday lives. Additional work required for graduate credit. Typically Offered: Fall (Odd Years).

ANTH 428 Social and Political Organization (3 credits)

Joint-listed with ANTH 528

Bases of social and political organization; kin based units; non-kin units; political units through primitive states. Additional projects/assignments required for graduate credit.

Prereqs: Upper-Division standing

ANTH 430 Archaeological History, Ethics, and Theory (3 credits)

Joint-listed with ANTH 530

This course explores the history of the archaeological discipline, theoretical trends within the field, and ethical implications of archaeological practice. Additional projects/assignments required for graduate credit.

Prereqs: ANTH 103 or Permission

ANTH 431 Historical Archaeology (3 credits)

Joint-listed with ANTH 531

Investigation of the techniques of historical archaeology as well as an introduction to historic material culture and the theories that inform historical archaeology research. Additional projects/assignments reqd for grad cr. ANTH 531 is a cooperative course available to WSU degree-seeking students.

Prereqs: ANTH 100

ANTH 432 Historical Artifact Analysis (3 credits)

Joint-listed with ANTH 532

An overview and detailed study of the major classes of material culture commonly recovered on historical sites. Course emphasizes the identification of historical materials and introduction of a variety of analytical tools used in historical archaeology.

Prereqs: ANTH 103 or ANTH 431 or Permission

ANTH 433 Applied Cultural Resource Management (3 credits)

Joint-listed with ANTH 533

Introduction to the practice of archaeology in the field of Cultural Resource Management (CRM). This course emphasizes and exposes students to skills needed in today's world of CRM. Additional projects/ assignments required for graduate credit.

ANTH 434 Stranger than Fiction: Pseudoarchaeology and Myths of the Past (3 credits)

Joint-listed with ANTH 534

How has popular culture like Indiana Jones, Ancient Aliens, and The Davinci Code shaped popular understandings about the past? This course examines popular myths about archaeological sites around the globe. Case studies include Stonehenge, Atlantis and Mu, the Nazca Lines, Ancient pyramid construction, cannibalism in the Donner Party, and other archaeological mysteries. Particular attention is given to understanding how pseudoarchaeological claims gain traction as popular folklore and on learning the true histories of these sites and people using archaeological science. Additional projects/assignments required for graduate credit.

ANTH 440 Forensic Science (3 credits)

Joint-listed with ANTH 540

This course provides a broad introduction to the various components that comprise the forensic sciences. This course examines the roots of forensic science, its practice, how it provides evidentiary support in criminal investigations, its ethical considerations and scientific rigor, as well as the methods and techniques employed by toxicologists, forensic pathologists, chemists, trace evidence analysts, digital forensic specialists, forensic anthropologists, fire scene recovery experts, dentists, and many more. Additional work required for graduate credit. Typically Offered: Spring (Odd Years) and Summer.

ANTH 442 Human Osteology and Osteometry (3 credits)

Joint-listed with ANTH 542

This course gives students a greater understanding of the particulars of the human skeletal system. Throughout the semester students will become familiar with the concepts and methods related to conducting analysis involving human remains. These skills will provide a theoretical and methodological framework for more advanced osteological work related to bioarchaeology, forensic identification, paleopathology, human anatomy and skeletal biology, and paleoanthropology. The course will focus on enhancing a student's knowledge of complete and fragmentary human skeletal elements, differentiation of human and non-human remains, and the assessment of the biological profile (age, sex, ancestry, stature, etc.). Additional coursework required for graduate credit. Typically Offered: Fall and Spring. Cooperative: open to WSU degree-seeking students.

ANTH 444 Health, Illness, and Society (3 credits)

Cross-listed with SOC 444

Joint-listed with ANTH 544

This course examines the various cultural events, biological processes, and socio-structural forces that contribute to health and disease of modern populations. Taking a holistic perspective, the course examines how communicable and genetic pathological conditions originate, how they have been handled throughout history and the lengths to which science, medicine, and other social institutions go to keep us healthy. The course also investigates how we perceive health and explores how various issues, such as genetics, social inequality, culture, and ideology influence how we promote well-being and care for the sick. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

ANTH 449 Lithic Technology (3 credits)

Joint-listed with ANTH 549

Manufacture and analysis of stone implements, theory of rock fracture, nonhuman productions of pseudo-artifacts. Additional projects/assignments required for graduate credit.

Prereqs: ANTH 103 or Permission**ANTH 451 Forensic Anthropology (3 credits)**

Joint-listed with ANTH 551

This course examines the process of identifying unknown contemporary skeletal material and its medicolegal ramifications. It covers the analysis and measurement of the human skeleton, including skeletal variation based on age, sex, stature, and ancestry. It also discusses the idiosyncratic skeletal features and pathological conditions that can help lead to a positive identification of the decedent. Additionally, students learn the basics of how to identify skeletal trauma and taphonomy, as well as how forensic anthropologists handle skeletal identifications in various contexts, such as human rights atrocities, natural disasters, mass fatality events, and military exhumations and identifications. Additional projects/assignments required for graduate credit.

ANTH 452 Bioarchaeology (3 credits)

Joint-listed with ANTH 552

This course provides students with a more in-depth look at the study of archaeology from the perspective of dealing with human skeletal remains. The course examines how historic and prehistoric skeletal material provides information about the health, status, living conditions, culture, trauma, demographics, and economics of past peoples. It also discusses mortuary and funerary traditions and considers the ethical considerations involved in studying skeletal remains. Additional projects/assignments required for graduate credit.

ANTH 455 Anthropology Senior Research (3 credits)

General Education: Senior Experience

Anthropology Senior Research is designed to provide the resources and guidance necessary for anthropology seniors to complete an independent research project focused in one or more of the sub-fields of anthropology. Typically Offered: Varies.

Prereqs: ANTH 416 or ANTH 417; and Senior Standing and Major in Department of Sociology and Anthropology; or Permission**ANTH 456 Anthropology of Modern War and Conflict (3 credits)**

Joint-listed with ANTH 556

This course examines what the careful study of human remains, material culture, history, and cultural context can illuminate about modern warfare and contemporary conflict. The course also investigates the role material and skeletal evidence plays in understanding historical context, subverting cultural and political hegemony, contributing to social and institutional memory and memorialization, and promoting/negating nationalist and ethnocentric narratives. Additional projects/assignments required for graduate credit.

ANTH 462 Human Issues in International Development (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Cross-listed with LAS 462

Joint-listed with ANTH 562

Course content includes the historical and political contexts that shape development, development theories and approaches, along with the global challenges of poverty, social inequalities, and environment. Culture as an important consideration in development is emphasized. Additional projects/assignments required for graduate credit. (Alt/years)

ANTH 463 Contemporary Issues Affecting Men & Masculinities (3 credits)

Joint-listed with ANTH 563

This course introduces the interdisciplinary studies of Anthropology, Sociology, and Gender Studies through focus on the social science scholarship of men and masculinities. Theoretical developments challenge stereotypes by stressing how masculinities are produced within specific historic and cultural domains, replacing ideas of men's power by revealing that men wield and access power differently depending on their race, class, sexuality, and location. Additional projects/assignments required for graduate credit. Typically Offered: Spring (Even Years).

Prereqs: ANTH 102 or SOC 101 or WGSS 201**ANTH 495 (s) Advanced Anthropological Research (1-15 credits, max 15)**

Joint-listed with ANTH 595

Provides students the opportunity to engage focused anthropological research with instructors in the department. The intent is to provide students the opportunity to pursue research in the field of anthropology in ways that are not possible in a broader classroom setting. The expectation is the class would generally build off of work initiated by a student in previous courses. Additional coursework required for graduate credit. Typically Offered: Fall and Spring.

ANTH 498 (s) Internship (1-16 credits)

Credit arranged

ANTH 499 (s) Directed Study (1-16 credits)

Credit arranged

ANTH 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ANTH 501 (s) Seminar (1-16 credits)

Credit arranged

ANTH 502 (s) Directed Study (1-16 credits)

Credit arranged

ANTH 503 (s) Workshop (1-16 credits)

Credit arranged

ANTH 504 (s) Special Topics (1-16 credits)

Credit arranged

ANTH 505 (s) Professional Development (1-16 credits)

Credit arranged

ANTH 509 Anthropological Field Methods (1-8 credits, max 8)

Individual field work in approved areas.

Prereqs: Permission**ANTH 511 Human Evolution (3 credits)**

Joint-listed with ANTH 411

Human origins in light of the fossil record and evolutionary theory.

Additional projects/assignments required for graduate credit.

Recommended Preparation: ANTH 100. Cooperative: open to WSU

degree-seeking students.

ANTH 516 Qualitative Social Science Methods (3 credits)

Joint-listed with ANTH 416, SOC 416

This course introduces students to social science research methods that collect qualitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit. Typically Offered: Varies.

ANTH 517 Social Data Analysis (3 credits)

Joint-listed with ANTH 417, SOC 417

This course introduces students to social science research methods that collect quantitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit.

Prereqs: SOC 101; STAT 251**ANTH 518 Anthropology of Tourism (3 credits)**

Across the globe, tourism has been touted as a route to economic sustainability and both national and local prosperity. As one of the largest and fastest growing industries in the modern world, tourism can supply wealth and growth opportunities to poverty stricken communities - but at what cost? In this course, we will examine both the advantages and disadvantages to a variety of forms of tourism: sex tourism, "primitive" tourism, heritage tourism, ecotourism, and nature tourism, to name a few. Additional work required for graduate credit.

ANTH 521 Contemporary Issues in Anthropological Theory (3 credits)

In-depth exploration of contemporary theoretical issues within anthropology.

Prereqs: ANTH 420 or equivalent, or Permission**ANTH 522 Contemporary Pacific Northwest Indians (3 credits)**

General Education: American Diversity

Joint-listed with AIST 422, ANTH 422

, RELS 422. This course is intended to impart an understanding of the vitality and rich diversity of contemporary Pacific Northwest American Indian societies, their histories, and their literatures, e. g. , in the arts and expressive culture, in governmental affairs both indigenous and external, in economics, ecological relations and natural resources, in health care, and in family, social and religious life, in oral traditions, in world views and cultural values. This understanding is inclusive of both indigenous cultural, as well as contact-historical, expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome. ANTH 422 is cooperative: open to WSU degree-seeking students. Cooperative: open to WSU degree-seeking students.

ANTH 525 Popular Culture and Consumerism (3 credits)

Joint-listed with ANTH 425

An interdisciplinary survey of the contemporary study of popular culture. Reviews contemporary theoretical approaches to mass, popular, folk, and fan cultures using material culture, texts, media, and cultural practices. Focus on critical analysis and understanding the significance of popular culture to society and how its consumption shapes everyday lives. Additional work required for graduate credit. Typically Offered: Fall (Odd Years).

ANTH 528 Social and Political Organization (3 credits)

Joint-listed with ANTH 428

Bases of social and political organization; kin based units; non-kin units; political units through primitive states. Additional projects/assignments required for graduate credit.

Prereqs: Upper-Division standing**ANTH 530 Archaeological History, Ethics, and Theory (3 credits)**

Joint-listed with ANTH 430

This course explores the history of the archaeological discipline, theoretical trends within the field, and ethical implications of archaeological practice. Additional projects/assignments required for graduate credit.

Prereqs: ANTH 103 or Permission**ANTH 531 Historical Archaeology (3 credits)**

Joint-listed with ANTH 431

Investigation of the techniques of historical archaeology as well as an introduction to historic material culture and the theories that inform historical archaeology research. Additional projects/assignments required for graduate credit. Cooperative: WSU degree-seeking students.

Prereqs: ANTH 100**ANTH 532 Historical Artifact Analysis (3 credits)**

Joint-listed with ANTH 432

An overview and detailed study of the major classes of material culture commonly recovered on historical sites. Course emphasizes the identification of historical materials and introduction of a variety of analytical tools used in historical archaeology.

Prereqs: ANTH 103 or ANTH 431 or Permission**ANTH 533 Applied Cultural Resource Management (3 credits)**

Joint-listed with ANTH 433

Introduction to the practice of archaeology in the field of Cultural Resource Management (CRM). This course emphasizes and exposes students to skills needed in today's world of CRM. Additional projects/assignments required for graduate credit.

ANTH 534 Stranger than Fiction: Pseudoarchaeology and Myths of the Past (3 credits)

Joint-listed with ANTH 434

How has popular culture like Indiana Jones, Ancient Aliens, and The Davinci Code shaped popular understandings about the past? This course examines popular myths about archaeological sites around the globe. Case studies include Stonehenge, Atlantis and Mu, the Nazca Lines, Ancient pyramid construction, cannibalism in the Donner Party, and other archaeological mysteries. Particular attention is given to understanding how pseudoarchaeological claims gain traction as popular folklore and on learning the true histories of these sites and people using archaeological science. Additional projects/assignments required for graduate credit.

ANTH 540 Forensic Science (3 credits)

Joint-listed with ANTH 440

This course provides a broad introduction to the various components that comprise the forensic sciences. This course examines the roots of forensic science, its practice, how it provides evidentiary support in criminal investigations, its ethical considerations and scientific rigor, as well as the methods and techniques employed by toxicologists, forensic pathologists, chemists, trace evidence analysts, digital forensic specialists, forensic anthropologists, fire scene recovery experts, dentists, and many more. Additional work required for graduate credit. Typically Offered: Spring (Odd Years) and Summer.

ANTH 542 Human Osteology and Osteometry (3 credits)

Joint-listed with ANTH 442

This course gives students a greater understanding of the particulars of the human skeletal system. Throughout the semester students will become familiar with the concepts and methods related to conducting analysis involving human remains. These skills will provide a theoretical and methodological framework for more advanced osteological work related to bioarchaeology, forensic identification, paleopathology, human anatomy and skeletal biology, and paleoanthropology. The course will focus on enhancing a student's knowledge of complete and fragmentary human skeletal elements, differentiation of human and non-human remains, and the assessment of the biological profile (age, sex, ancestry, stature, etc.). Additional coursework required for graduate credit. Typically Offered: Fall and Spring. Cooperative: open to WSU degree-seeking students.

ANTH 544 Health, Illness, and Society (3 credits)

Joint-listed with ANTH 444, SOC 444

This course examines the various cultural events, biological processes, and socio-structural forces that contribute to health and disease of modern populations. Taking a holistic perspective, the course examines how communicable and genetic pathological conditions originate, how they have been handled throughout history and the lengths to which science, medicine, and other social institutions go to keep us healthy. The course also investigates how we perceive health and explores how various issues, such as genetics, social inequality, culture, and ideology influence how we promote well-being and care for the sick. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

ANTH 545 Indigenous Ways of Knowing (3 credits)

Cross-listed with AIST 445

The course is intended as an introduction to issues of cultural, racial, ethnic and linguistic diversity that arise in American school and society. In particular we will be looking at indigenous epistemological comparison with Western educational models. The central question for the course will be: Why is educational attainment different for different groups in society, and how does that difference relate to social stratification characteristics of the larger society? We will also try to answer other questions: What is the impact of cultural and linguistic diversity on the various institutions of society, including family, schools, and the economic system? What policies and programs have been developed in the US and other societies to deal with cultural diversities? These and other questions will be the basis for our reading and discussions. Typically Offered: Fall.

ANTH 549 Lithic Technology (3 credits)

Joint-listed with ANTH 449

Manufacture and analysis of stone implements, theory of rock fracture, nonhuman productions of pseudo-artifacts. Additional projects/assignments required for graduate credit.

Prereqs: ANTH 103 or Permission

ANTH 551 Forensic Anthropology (3 credits)

Joint-listed with ANTH 451

This course examines the process of identifying unknown contemporary skeletal material and its medicolegal ramifications. It covers the analysis and measurement of the human skeleton, including skeletal variation based on age, sex, stature, and ancestry. It also discusses the idiosyncratic skeletal features and pathological conditions that can help lead to a positive identification of the decedent. Additionally, students learn the basics of how to identify skeletal trauma and taphonomy, as well as how forensic anthropologists handle skeletal identifications in various contexts, such as human rights atrocities, natural disasters, mass fatality events, and military exhumations and identifications. Additional projects/assignments required for graduate credit.

ANTH 552 Bioarchaeology (3 credits)

Joint-listed with ANTH 452

This course provides students with a more in-depth look at the study of archaeology from the perspective of dealing with human skeletal remains. The course examines how historic and prehistoric skeletal material provides information about the health, status, living conditions, culture, trauma, demographics, and economics of past peoples. It also discusses mortuary and funerary traditions and considers the ethical considerations involved in studying skeletal remains. Additional projects/assignments required for graduate credit.

ANTH 556 Anthropology of Modern War and Conflict (3 credits)

Joint-listed with ANTH 456

This course examines what the careful study of human remains, material culture, history, and cultural context can illuminate about modern warfare and contemporary conflict. The course also investigates the role material and skeletal evidence plays in understanding historical context, subverting cultural and political hegemony, contributing to social and institutional memory and memorialization, and promoting/negating nationalist and ethnocentric narratives. Additional projects/assignments required for graduate credit.

ANTH 562 Human Issues in International Development (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Joint-listed with ANTH 462, LAS 462

Course content includes the historical and political contexts that shape development, development theories and approaches, along with the global challenges of poverty, social inequalities, and environment. Culture as an important consideration in development is emphasized. Additional projects/assignments required for graduate credit. (Alt/years)

ANTH 563 Contemporary Issues Affecting Men & Masculinities (3 credits)

Joint-listed with ANTH 463

This course introduces the interdisciplinary studies of Anthropology, Sociology, and Gender Studies through focus on the social science scholarship of men and masculinities. Theoretical developments challenge stereotypes by stressing how masculinities are produced within specific historic and cultural domains, replacing ideas of men's power by revealing that men wield and access power differently depending on their race, class, sexuality, and location. Additional projects/assignments required for graduate credit. Typically Offered: Spring (Even Years).

Prereqs: ANTH 102 or SOC 101 or WGSS 201

ANTH 570 (s) Materiality and Human Cultures (3 credits)

This graduate seminar focuses on a variety of archaeological topics studied by contemporary archaeologists. Subject matter will vary from year to year.

ANTH 571 (s) Cultural Complexity (3 credits)

This graduate seminar focuses on a variety of cultural, ethnographic, folkloric, and linguistic topics studied by contemporary anthropologists. Subject matter will vary from year to year.

ANTH 572 (s) Topics in Biological Anthropology (3 credits)

This graduate seminar focuses on a variety of human evolutionary, human health, forensic, and bioarchaeological topics studied by contemporary biological anthropologist and bioarchaeologists. Subject matter will vary from year to year.

ANTH 595 (s) Advanced Anthropological Research (1-15 credits, max 15)
Joint-listed with ANTH 495

Provides students the opportunity to engage focused anthropological research with instructors in the department. The intent is to provide students the opportunity to pursue research in the field of anthropology in ways that are not possible in a broader classroom setting. The expectation is the class would generally build off of work initiated by a student in previous courses. Additional coursework required for graduate credit. Typically Offered: Fall and Spring.

ANTH 598 (s) Internship (1-16 credits)
Credit arranged

ANTH 599 (s) Non-thesis Master's Research (1-16 credits)
Credit arranged Research not directly related to a thesis or dissertation.
Prereqs: Permission

Apparel, Textiles and Design (ATD)

ATD 119 Introduction to Fashion and the Apparel Industry (3 credits)

Introduction to the sewn product manufacturing and merchandising industry; overview of socio-cultural, historic, aesthetic, design, business, and economic factors; emphasis on careers in the sewn products industry. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. Typically Offered: Fall.

ATD 123 Textiles (3 credits)

Fiber, yarn, and fabric properties, color and finishes as they relate to performance, care, and consumer satisfaction. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. Typically Offered: Spring.

ATD 124 Introduction to Apparel Construction (2 credits)

Introduction to hand sewing, home, and industrial sewing machinery to construct garments and products. Two 2.5-hour studios per week, 1 hour of outside studio time, and assigned work. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. Typically Offered: Fall, Spring.

ATD 223 Fashion Business and Product Development (3 credits)

Analysis of textile and apparel products and processes relative to design, development, and production methods, including evaluation of consumer value. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. Open to all students with sophomore standing or higher. Typically Offered: Spring.

ATD 224 Apparel Construction and Assembly Processes (3 credits)

The course explores intermediate-level garment construction techniques and the relationship between design concepts, fabric characteristics, and fit. Students will complete individual projects in a variety of fabric types and assembly techniques within an apparel industry context. Two 3-hour studios per week, an expected 6-9 hours of outside studio time, and assigned work. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. Typically Offered: Spring.

Prereqs: ATD 124 or Instructor Permission

ATD 239 Digital Illustration for the Apparel Industry (3 credits)

Introduction to digital illustration software including apparel illustration tools, editing and coloring, working in the digital environment, and digital board building. Students follow an industry-typical concept and design process for a target customer, including corresponding design boards, line of garments, line presentation, and creation of an online portfolio site. Typically Offered: Fall.

Prereqs: ATD 119, ATD 123, and ATD 224

ATD 324 Patternmaking (4 credits)

Methods and principles of flat pattern and draping design; use of pattern making skills and advanced construction skills in apparel product development; developing specifications for apparel production. Two 3-hour studios per week and assigned work. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Apparel, Textiles and Design courses. Typically Offered: Fall.

Prereqs: ATD 239 and ATD 224 with a grade of 'C' or better and Apparel, Textiles, and Design major; or Permission

ATD 325 Digital Patternmaking & Technical Design (3 credits)

This course builds on existing patternmaking skills by applying methods and techniques for developing patterns using computer-aided pattern drafting software and includes grading, markers, and graded spec sheets. Typically Offered: Spring.

Prereqs: ATD 324

ATD 326 Textile Structures (1-3 credits, max 9)

This studio course gives students the opportunity to experiment with fiber-based fabrications. These may include woven, knitted, felted, laced, and knotted fabrications dependent on current industry trends. May include embellishment and surface design depending on the fabrication and industry trends. Can be repeated up to 3 times. Typically Offered: Spring.

Prereqs: ATD 123 or Permission

ATD 327 Textile Surface Design (1-3 credits, max 9)

This studio course gives students the opportunity to experiment with the texture and appearance of textile fabrications. Techniques may include dyeing and resist methods, subtraction, and embellishment, among others depending on industry trends. Typically Offered: Fall.

Prereqs: ATD 123 or Permission

ATD 328 Experimental Construction (1-3 credits, max 9)

This studio course gives students the opportunity to experiment with transforming two-dimensional textiles into three-dimensional apparel products. Techniques may include tailoring, upcycling, use of non-traditional textiles, and use of fabrics students have produced in other courses, among others dependent on current industry trends. Can be repeated up to 3 times. Typically Offered: Fall (Even Years).

Prereqs: ATD 224 or Permission

ATD 339 Apparel Technology (3 credits)

Introduction to e-Textiles, laser cutting and 3D printing in an apparel or wearable context. Students will learn how to design within each technology and produce prototypes for evaluation. Typically Offered: Fall.

ATD 349 History of Western Dress (3 credits)

Historic overview of western dress from ancient Mesopotamia and Egypt to Western Europe through the 20th century; focus on dress and human appearance as a reflection of the socio-cultural factors of the times.

Typically Offered: Fall.

Prereqs: ATD 123 and ART 100; or Permission

ATD 404 (s) Special Topics (1-16 credits)

Credit arranged

ATD 413 Portfolio Development (3 credits)

Preparation of a professional portfolio, in both digital and hard copy formats, for design, merchandising, and other FCS career development applications. Typically Offered: Fall.

Prereqs: ATD 239 and ATD 324; or Permission

ATD 424 Senior Experience: Apparel Design (4 credits)

General Education: Senior Experience

Intensive apparel design studio experience culminating in the design, development, and creation of the Senior Apparel Collection. Preparation and participation in a public exhibition is required. Typically Offered: Spring.

Prereqs: ATD 223, ATD 324, ATD 325, and Senior standing; or Permission

ATD 428 Design and Development for a Client (3 credits)

Student teams develop a line of apparel for a client from concept to finished prototype; design, patternmaking, construction, tech pack building and presentation skills are all used throughout the course. Typically Offered: Fall.

Prereqs: ATD 223 and ATD 324

ATD 441 Historic Dress Collections Management (3 credits)

Introduction to managing a historic collection of garments including accession and deaccession policies and procedures, conservation and storage practices, disaster management, and research for and mounting of exhibitions. Typically Offered: Spring.

Prereqs: FCS Major

ATD 449 Dress and Culture (3 credits)

General Education: International

Dress and culture examined from an interdisciplinary and cross-cultural perspective with emphasis on diversity within a global scale society; the relationship of dress to physical environments, social and economic systems, aesthetic expression, individual identity, and cultural ideals and values. Field trip. Typically Offered: Spring.

Prereqs: Humanities and Social Science General Education completed, Junior standing, or Permission

ATD 450 Sewn Product Industry Tour (1 credit)

Field site tours of apparel industry firms representing design, manufacturing, merchandising, sourcing, retailing, and other aspects of the industry. Forty-five hours of instruction, field experience, and follow-up project work (3 hours prep, 32 hours tours/company visits, 10 hours project). Variable field trip fee depending on actual cost. Typically Offered: Fall.

Prereqs: Apparel, Textiles and Design major and junior standing; or Permission

ATD 460 Apparel Promotion and Merchandising (3 credits)

General Education: Senior Experience

Promotion in Merchandising is designed to cover the principles of fashion, consumer behavior as it relates to promotion activities, and non-personal selling techniques. The non-personal selling techniques to be covered include (but are not limited to) store image, advertising, display, publicity/public relations, fashion shows, and special events. Students will be involved in actual hands-on experience with many of the techniques. Typically Offered: Spring.

Prereqs: ATD 119, ATD 239, and ATD 223

ATD 498 (s) Internship (1-16 credits, max 9)**ATD 499 Directed Study (1-16 credits)**

Credit arranged

Architecture (ARCH)

ARCH 151 Introduction to the Built Environment (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

Introduction to the complexities and wonders of the built environment, and the role of the humanities in successful designs. From the regional landscapes to urban design and architecture, to the intimacy of interiors and dwellings, to place making and space making, student perspectives are broadened on how the built environment is shaped by and contributes to an evolving human story. The built environment is also examined as a product of a multitude of forces that include: place, climate, conservation, culture, economics, beliefs, and aspirations for well-being.

ARCH 154 Introduction to Architectural Graphics (3 credits)

Introduction to architectural graphics; two 1-hour lecture sessions per week, plus two 1-hour studio sessions per week; weekly assigned drawing projects, readings, and sketchbook projects; periodic quizzes. Cooperative: open to WSU degree-seeking students.

ARCH 200 (s) Seminar (1-16 credits)

Credit arranged

ARCH 203 (s) Workshop (1-16 credits)

Credit arranged

ARCH 204 (s) Special Topics (1-16 credits)

Credit arranged

ARCH 243 Media in Architecture (3 credits)

Introduction to techniques for hybridizing manual & digital design tools for workflows relative to the architectural design process; includes virtual modeling, CNC fabrication, 2D/3D printing, manual drafting, manual modeling, various software. Two 75-minute sessions per week; in class lectures and workshops; tools, techniques, and exercises integrated with ARCH 253.

Coreqs: ARCH 254

ARCH 253 Architectural Design I (4 credits)

Introduction to Architectural Design Fundamentals including formal principles, ordering systems, conceptualization, experimentation, design making, & design communication for the resolution of given architectural design problems. Two 3-hour studio sessions per week; course includes lectures, workshops, project development, presentations, and readings.

ARCH 254 Architectural Design II (4 credits)

Cross-listed with IAD 254

Basic integration of principles and concepts for architectural design, both interior & exterior. Two 3-hour studios per week and assigned work.

Prereqs: ARCH 253 or Permission

Coreqs: ARCH 243

ARCH 257 Architectural Design Bootcamp (7 credits)

Intensive introduction to various design processes from concept to schematic to design development. Acquisition of a beginning level of both graphic and architectural design literacy, design thinking strategies, aesthetic awareness. Development of basic design communication skills.
Prereqs: Architecture Permission

ARCH 266 Materials and Methods (3 credits)

Introduce physical and performance characteristics of materials, and concepts, conventions and processes of construction methods. Provide a foundation for subsequent courses in architectural technology and design.

ARCH 299 (s) Directed Study (1-16 credits)

Credit arranged

ARCH 353 Architectural Design III (6 credits)

Development of architectural design process and projects that cultivate an understanding of structures, properties of materials and building tectonics. Emphasis is also placed on precedent analysis, basic code, and site related issues. Three 3-hour studios per week and assigned work; field trips required at student expense outside scheduled hours; some class critique sessions may meet outside scheduled hours.
Prereqs: ARCH 254 or equivalent. Application Required.

ARCH 354 Architectural Design IV (6 credits)

Continued development of architectural projects and design process that cultivate understanding of the properties of materials and building tectonics. Three 3-hour studios per week and assigned work; field trips will be required at student expense outside scheduled hours; some class critique sessions will meet outside scheduled hours.
Prereqs: ARCH 353

ARCH 361 Structural Systems I (3 credits)

Project based introduction to the physical principles that govern statics and strength of materials. Graphical and numerical methods for designing and analyzing structures are used.

Prereqs: PHYS 111, PHYS 111L, MATH 143, ARCH 266

ARCH 362 Structural Systems II (3 credits)

Project based course with focus on the overall building behavior of framing systems. Graphical and numerical methods for designing and analyzing structures are used.

Prereqs: ARCH 361

ARCH 385 Global History of Architecture (3 credits)

A global survey of architecture and urban design from its beginnings through the seventeenth century, considered within the social, cultural, religious, and political contexts that shape it. Recommended Preparation: ARCH 151.

ARCH 386 Global History of Architecture II (3 credits)

A global survey of architecture and urban design from the Enlightenment to the present, considered within the social, cultural, political and technological contexts that shape it.

ARCH 388 Architectural Theory (3 credits)

This course is aimed at familiarizing students with key movements, thinkers, and developments in architectural theory's continued evolution, so that they are prepared to go into the world and produce thoughtful work and well-crafted thought.

Prereqs: ARCH 151

ARCH 400 (s) Seminar (1-16 credits)

Credit arranged

ARCH 403 (s) Workshop (1-16 credits)

Credit arranged

ARCH 404 (s) Special Topics (1-16 credits)

Credit arranged

ARCH 410 Sketching for Architecture (3 credits)

Instruction in intermediate through advanced architectural sketching, painting, and place-recording techniques. A variety of media techniques will be employed, including graphite, charcoal, colored pencil, pen & ink, and watercolor. The majority of work will be completed in class, with additional homework assignments outside class and on field trips. Recommended Preparation: Basic sketching abilities, as developed in ARCH 154 and subsequent architectural design studios.

ARCH 411 Native American Architecture (3 credits)

General Education: American Diversity

Cross-listed with AIST 411

Joint-listed with ARCH 511

An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

ARCH 415 Instructional Assistant (1-3 credits, max 6)

Assist instructors in delivering courses including classroom and teaching technology set up, taking roll, and other administrative or logistical tasks. Assistants may also (at instructor direction) work with students on design studio critiques, discussion, or other related activities. Instructional assistants cannot award or enter grades.

Prereqs: Fourth-year standing in architecture programs

ARCH 416 Social Sustainability in Contemporary Cities (3 credits)

Joint-listed with ARCH 516

Seminar provides an overview of the social dimension of sustainability and its related issues in contemporary cities in the world. Exploration of concepts and strategies of social urban sustainability through case studies to critically evaluate urban governance and policies in both developed and developing countries, and assessment of struggles for social justice and equality. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

ARCH 421 China Program Preparation Seminar (2 credits)

Joint-listed with ARCH 521

Seminar course preparing students for summer study abroad program in China. This course will introduce travelling, money management, safety, visa application, and some basic cultural introductions. Also, this class will introduce the academic courses to be undertaken in China and prepare research data collection. Required for all students enrolled in the China program. (Spring only)

Prereqs: ARCH 353 or LARC 353 Cooperative: open to WSU degree-seeking students.

ARCH 422 China's Urbanization Seminar (2 credits)

Joint-listed with ARCH 522

Seminar course conducted in China, focusing on understanding the complicated challenges of China's urbanization and design strategies for urban development.

Prereqs: ARCH 354 or LARC 365

ARCH 423 Cultural & Ethical Issues in Global Architectural Practice (2 credits)

Joint-listed with ARCH 523

Study of the phenomenon of architectural practice under the impact of globalization using the market of China as an example. Focus on the development of model architectural practice in China as well as the associated social and cultural issues of global architectural practice.

Prereqs: ARCH 354 or LARC 365

ARCH 430 Rome Preparatory Seminar (2 credits)

Seminar preparing students for summer study abroad in Rome, Italy. Introduces academic courses to be taken in Rome, and begins research and information-gathering tasks for Design Studio and Rome Design History courses. Also includes practical matters such as travel planning, money, safety, and basic language skills. (Spring only) Cooperative: open to WSU degree-seeking students.

ARCH 431 Rome Design History (3 credits)

Lecture course conducted in Rome, Italy, focused on the essential eras of Roman history related to design (art, architecture, urban planning, etc.): Republican & Imperial Rome; Early Christian Rome; Renaissance & Baroque Rome; the "Third Rome" of the Risorgimento and Mussolini; Contemporary Rome of the late-20th and early-21st Centuries.

Prereqs: ARCH 430

ARCH 454 Architectural Design: Vertical Studio (6 credits, max 12)

General Education: Senior Experience

Joint-listed with ARCH 554

Architectural and/or urban design projects are developed to explore and integrate urban theory sustainable design, construction and environmental control systems technology, experimental design approaches, human and cultural factors, and construction assemblies. Design projects completed individually or in team/collaborative settings encouraged. Three 3-hour studios per week and assigned work. Field trips at student's expense are required and meet outside scheduled hours; some class critique sessions meet outside scheduled hours. Additional projects/assignments required for graduate credit.

Prereqs: ARCH 353 and ARCH 354; or Permission

ARCH 461 Building Assemblies (3 credits)

Advanced building construction with focus on building enclosure systems and assemblies.

Prereqs: ARCH 362, ARCH 463, or Instructor Permission

ARCH 463 Environmental Control Systems I (3 credits)

Principles and design of sustainable passive energy systems, mechanical heating and cooling systems, air quality, fire suppression and vertical transport. Three 1-hour lectures per week.

Coreqs: ARCH 463L

ARCH 463L Environmental Control System I Lab (1 credit)

1 credit Laboratory to accompany the ARCH 463 lecture. One 2-hour lab per week.

Coreqs: ARCH 463

ARCH 464 Environmental Control Systems II (3 credits)

Principles and design of integrated natural and electrical lighting systems, water use and conservation systems, storm and waste water treatment and management, and acoustic systems as well as principles for and evaluation of sustainable architecture. Three 1-hour lectures per week.

Coreqs: ARCH 464L

ARCH 464L Environmental Control System II Lab (1 credit)

1 credit Laboratory to accompany the ARCH 464 lecture. One 2-hour lab per week.

Coreqs: ARCH 464

ARCH 475 Professional Practice (3 credits)

Joint-listed with ARCH 575

Overview of professional standards and practices in the architecture and interior design professions. Including duties and responsibilities in practice (construction documents and contracts, code analysis, ethics, and professional organizations and alliances), project management, office administration, and comprehensive services; specification writing, unit costs, and building estimation. Additional assignments/projects required for graduate credit.

ARCH 483 Urban Theory and Issues (3 credits)

History and theory of city planning and problems associated with urban growth.

ARCH 498 (s) Internship (1-16 credits)

Credit arranged

ARCH 499 (s) Directed Study (1-16 credits)

Credit arranged

ARCH 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ARCH 501 (s) Seminar (1-16 credits)

Credit arranged

ARCH 502 (s) Directed Study (1-16 credits)

Credit arranged

ARCH 503 (s) Workshop (1-16 credits)

Credit arranged

ARCH 504 (s) Special Topics (1-16 credits)

Credit arranged

ARCH 505 Architectural Research Methods (3 credits)

Quantitative and qualitative research designs, procedures, instruments, and techniques for use in architectural research, programming and design.

Prereqs: Grad standing in M. Arch. /M. A. program

ARCH 510 Graduate Project Seminar (3 credits)

Specialized research and program writing in preparation for ARCH 556 as well as schematic design proposals. Prereqs or

Coreqs: ARCH 553

ARCH 511 Native American Architecture (3 credits)

General Education: American Diversity

Joint-listed with AIST 411, ARCH 411

An exploration of Native American architecture in North America, including ancient, historic, and contemporary buildings and settlements within their diverse social, cultural, and physical contexts. Additional assignments required for graduate credit. (Spring only)

ARCH 514 Introduction to Graduate Architecture Research (1 credit)

This class is a discussion-based class aimed at familiarizing new architecture graduate students with possible research directions for their graduate project. Typically Offered: Summer.

ARCH 516 Social Sustainability in Contemporary Cities (3 credits)

Joint-listed with ARCH 416

Seminar provides an overview of the social dimension of sustainability and its related issues in contemporary cities in the world. Exploration of concepts and strategies of social urban sustainability through case studies to critically evaluate urban governance and policies in both developed and developing countries, and assessment of struggles for social justice and equality. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

ARCH 517 Graduate Instructional Assistant (1-3 credits, max 6)

Assist instructors in delivering undergraduate courses including classroom and teaching technology set up, taking roll, and other administrative or logistical tasks. Assistants may also (at instructor direction) work with students on design studio critiques, discussions or other related activities. Graduate Instructional assistants may also contribute to the evaluation and grading process, but final grade is the responsibility of the instructor of record.

Prereqs: Graduate standing in architecture program.

ARCH 520 Architectural Research Methods (3 credits)

Philosophy of research in architecture, research design, data gathering and interpretation, and thesis preparation.

ARCH 521 China Program Preparation Seminar (2 credits)

Joint-listed with ARCH 421

Seminar course preparing students for summer study abroad program in China. This course will introduce travelling, money management, safety, visa application, and some basic cultural introductions. Also, this class will introduce the academic courses to be undertaken in China and prepare research data collection. Required for all students enrolled in the China program. (Spring only) Cooperative: open to WSU degree-seeking students.

ARCH 522 China's Urbanization Seminar (2 credits)

Joint-listed with ARCH 422

Seminar course conducted in China, focusing on understanding the complicated challenges of China's urbanization and design strategies for urban development.

ARCH 523 Cultural & Ethical Issues in Global Architectural Practice (2 credits)

Joint-listed with ARCH 423

Study of the phenomenon of architectural practice under the impact of globalization using the market of China as an example. Focus on the development of model architectural practice in China as well as the associated social and cultural issues of global architectural practice.

ARCH 552 Alternate Graduate Design Experience (6 credits)

Independent exploration of specific issues in architecture and/or urban design, including off-site, national or international education or professional experiences, for qualified students. An application, including Independent study plans and credits must be approved by the Department during the semester before the proposed study. May be substituted for ARCH 554.

Prereqs: B. S. Architecture

ARCH 553 Integrated Architectural Design (6 credits)

Integrative design of an architectural project including all phases of the design process with particular emphasis on schematic design and design development. Demonstration of ability to develop spatial details and construction systems concepts in support of design goals. Three 3-hour studios per week and assigned work; field trips required at student expense outside scheduled hours; some class critique sessions will meet outside scheduled hours.

Coreqs: ARCH 568

ARCH 554 Architectural Design: Vertical Studio (6 credits, max 12)

General Education: Senior Experience

Joint-listed with ARCH 454

Architectural and/or urban design projects are developed to explore and integrate urban theory sustainable design, construction and environmental control systems technology, experimental design approaches, human and cultural factors, and construction assemblies. Design projects completed individually or in team/collaborative settings encouraged. Three 3-hour studios per week and assigned work. Field trips at student's expense are required and meet outside scheduled hours; some class critique sessions meet outside scheduled hours. Additional projects/assignments required for graduate credit.

ARCH 556 Graduate Project (6 credits)

Graduate terminal project - a self-directed architectural design study with faculty consultation within a studio context. Students demonstrate their capacity to apply appropriate programming and research methods in pursuit of a focused design topic. The project culminates with a project book prepared by the student.

Prereqs: ARCH 510, ARCH 553, and ARCH 554

ARCH 568 Technical Integration in Design (3 credits)

Strategies for integrating structure, enclosure, services, site, and interior systems in the design and development of an architectural concept.

Prereqs: ARCH 461, ARCH 463, ARCH 464, or equivalent

ARCH 570 Natural Lighting (3 credits)

Natural lighting seminar/workshop including hands-on experience with physical and digital modeling techniques. The course includes a term-long investigation of the nature of Palouse light, and a redesign problem of a real space on-campus or nearby, which will be measured, modeled, redesigned, predicted, redesigned, and evaluated.

ARCH 571 Building Performance Evaluation (3 credits)

This case-study based course focuses on evaluation methods for occupied buildings. A full-range of physical measurement and user surveying techniques are presented and employed on local buildings.

ARCH 574 Building Performance Simulation for Integrated Design (3 credits)

Cross-listed with ME 571

3 credit This course focuses on design decisions that impact energy, thermal, visual and acoustic comfort with a strong emphasis on building simulation tools. This course provides students with the understanding of the nature of building thermal comfort, building envelope behavior, ventilation requirements, indoor air quality, passive cooling systems, energy conservation, and the importance of iterative building simulation in achieving high performance buildings.

ARCH 575 Professional Practice (3 credits)

Joint-listed with ARCH 475

Overview of professional standards and practices in the architecture and interior design professions. Including duties and responsibilities in practice (construction documents and contracts, code analysis, ethics, and professional organizations and alliances), project management, office administration, and comprehensive services; specification writing, unit costs, and building estimation. Additional assignments/projects required for graduate credit.

ARCH 580 British Green Architecture (2 credits)

Preparation for students who will participate in the summer studies abroad program in London, including basic research on green building in the UK, helping plan the itinerary. All logistical preparations for studies abroad will be discussed and students are familiarized with both green approaches to design and British culture. (Spring only) Cooperative: open to WSU degree-seeking students.

ARCH 598 (s) Internship (1-3 credits, max 6)

Work in an architectural office under the supervision of a licensed architect.

Prereqs: Permission

ARCH 599 Non-thesis Master's Research (1-16 credits, max arranged)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Art (ART)

Note: On registering for a studio course offered in this department, the student agrees that the department may retain work completed by the student.

Vertically-related courses in this subject field are:

- ART 111–ART 112–ART 211
- ART 221–ART 222–ART 321–ART 322
- ART 231–ART 330
- ART 241–ART 340
- ART 251–ART 350
- ART 271–ART 272–ART 370

ART 100 Introduction to Art: Why Art Matters (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

An introduction to the diverse ways in which art can function and the significance of art as it impacts the lives of individuals. The course will provide a global perspective, thinking of art not just as a product of Europe and the U. S. but of humans around the world. The course will explore the convergences of cultures and is designed to be an intentionally comparative course. Students will engage in discussion and art prompts that investigate problems and issues presented in looking at and understanding artworks as well as the processes artists use to create. This course includes lectures/videos presentations, visiting artists talks, course readings and is evaluated through art-making projects and reflective writing. Typically Offered: Fall and Spring.

ART 110 Integrated Art and Design Communication (2 credits)

Introduction to the history, theory, language, principles and processes of art and design. Lectures, readings and writing assignments are connected to the studio experiences in ART 121.

ART 111 Drawing I (3 credits)

Freehand drawing; emphasis on expressive use of materials. Two 2-hour studios per week.

ART 112 Drawing II (3 credits)

In the Art 112 studio course we build on the foundation of Art 111 with an emphasis on drawing as a form of thinking and communication in art and design disciplines. In the studio we will work to familiarize students with strategies of using drawing for analogy, translation, imagination, and abstraction. The exploration of techniques, media, subject matter, and processes are intended to support practices in various creative professions. Freehand drawing with various media will be the focus of this class with the intent that you will use your skills to develop ideas as part of your creative process. Typically Offered: Spring.

Prereqs: ART 111

ART 121 Integrated Design Process (3 credits)

Introduction to design process as it relates to art and design disciplines; studio problems to familiarize students with basic design process, principles and elements of design. Studio experiences, readings, and written analysis challenge students to explore basic two- and three-dimensional design and color. Two 3-hour studios a week and assigned work; attendance at outside events (lectures, symposiums, university gallery openings). Typically Offered: Fall and Spring.

ART 122 Art & Design Process (3 credits)

Continuation of study of design process; studio problems challenge students to apply elements and principles of design to studio problems that include traditional and experimental concepts of design. Studio experiences, readings, and written analysis allow for further exploration of two- and three-dimensional design as well more complex concepts such as context, time, and light. Two 3-hour studios per week and assigned work; attendance at outside events (lectures, symposiums, Prichard and University Gallery openings).

ART 200 (s) Seminar (1-16 credits)

Credit arranged

ART 203 (s) Workshop (1-16 credits, max arranged)

Credit arranged.

Prereqs: Permission

ART 204 (s) Special Topics (1-16 credits)

Credit arranged

ART 205 Visual Culture (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
An introduction to the interdisciplinary approaches in art history, visual studies, film and media studies, sociology, and the general field of cultural studies that constitute the field of visual culture. Visual Culture addresses the societal, cultural, economic, aesthetic, and political dimensions and provocations of images and the visual in our contemporary world. This course offers a broad introduction to the most important critical and theoretical methods for the analysis, critique, and evaluation of visual culture. Typically Offered: Varies.

ART 211 Life Drawing (3 credits)

Life drawing, work with various media to develop an understanding of the human figure. Two 3-hour studios per week and assigned work.

Prereqs: ART 111 and ART 112, or Permission

ART 213 History and Theory of Modern Design (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Study, analysis, and critique of design history and theory from Industrial Revolution to the present. Historical and theoretical analysis of the emergence of the industrial, product, graphic, and interaction/experience design professions and the relationship between design products, corporations, and global communities. Throughout the course we will critically examine and address the theoretical and practical aspects of contemporary design. Topics considered include: industrialization and modernism; design and propaganda; design and the modernist avant-garde; design and nationalism; the politics and economics of global design movements; and design and advertising. Typically Offered: Fall and Spring.

ART 216 Digital Tools (3 credits)

Introduction to professional design, development, and production workflows related to various aspects of digital design. Demos and lectures cover various industry standard design software. Two 2-hour studios per week and assigned work.

Prereqs: ART 110 and ART 121; or Permission

ART 217 Ancient & Pre-Modern Art (3 credits)

A survey of ancient to early modern art, covering the period from classical antiquity through neoclassicism and the industrial revolution. Particular care will be taken to situate the art, architecture, and design of each period in its cultural, political, and religious contexts. Basic methods and approaches of art history will be also be covered. Classes will be mostly lectures, with discussion of primary sources. No prior experience with art or history is required. Typically Offered: Varies.

ART 221 Introduction to Graphic Design (3 credits)

Creative problem solving with emphasis on two dimensional solutions to formal and conceptual design problems; fundamental design principles are reiterated and developed into visual communication using word and image. Design process, prototyping and industry standard software will be used. Recommended Preparation: Working knowledge of digital design software or ART 216 (strongly recommended). Two 3-hour studios per week and assigned work.

ART 222 Introduction to Typography (3 credits)

Visual communication design with emphasis on typography, letterforms, and typographic syntax. Ideas are developed into thoughtful visual communication through the exploration of typographic conventions and the use of type as image. Introduction to history and theory of typography. Working knowledge of digital design software or ART 216 (strongly recommended). Two 3-hour studios per week and assigned work.

ART 231 Painting I (3 credits)

Intro to basic fundamentals of painting - oil, acrylic, watercolor and gouache; understanding the role of color, techniques in paint application, and concept. Two 3-hour studios per week and assigned work. Typically Offered: Fall and Spring.

Prereqs: ART 111 or Permission

ART 241 Sculpture I (3 credits)

Introductory studio environment with emphasis on basic design principles and techniques, tool safety, material exploration, and the development of unique personal expressions in three dimensions. Two 3-hour studios per week and assigned work.

ART 251 Printmaking I (3 credits)

Intro to basic printmaking techniques, relief, intaglio, and monotype; emphasis on sensitivity to materials and individual development.

ART 261 Ceramics I (3 credits)

Introductory studio environment with emphasis on basic design principles and techniques, hand-built forming methods, development and articulation of individual design criteria, and glaze and surface experimentation. Two 3-hour studios per week and assigned work. Typically Offered: Fall and Spring.

Prereqs: ART 121 or permission

ART 271 Introduction to Interaction Design (3 credits)

Creative problem solving with emphasis on User Experience (UX) and User Interaction (UI) design practices for mobile devices. Exercises and projects assigned include project proposal, product identity, design personas, user personas, development of user interfaces, documentation of product user flows, and live prototyping. Design process, prototyping, and industry standard software will be used. Two 3-hour studios per week and assigned work. Typically Offered: Fall and Spring.

Prereqs: ART 216 or Permission

ART 272 Introduction to Experiential Design (3 credits)

Creative problem solving with emphasis on experiential design for the built environment. Immersive storytelling within spaces, placemaking, and theming. Exercises and projects explore a variety of scenarios, including retail and dining, entertainment, theme parks, and cultural sites. Design process, prototyping and industry standard software will be used. Two 3-hour studios per week and assigned work. Typically Offered: Fall and Spring.

Prereqs: ART 216 or Permission

ART 280 Understanding Photography (3 credits)

Basic skills of camera operation; emphasis on image design and creative techniques; lecture topics include exposure, lenses, composition, filters, and films. 35mm adjustable camera required, plus additional costs for photographic materials. Two lectures and one 3-hour recitation per week.

ART 299 (s) Directed Study (1-16 credits)

Credit arranged

ART 302 Modern Art and Theory (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

A study of the principal artistic movements and theories in modern art from c. 1880 to World War II. Beginning with late-nineteenth-century modernism, the course closely examines the historical, societal, cultural, philosophical, and theoretical frameworks from which modern art and theory emerged. Modernist movements to be considered include, Neoimpressionism, Symbolism, Fauvism, German Expressionism, Futurism, Cubism, Dada, and Surrealism, among others.

ART 303 Contemporary Art and Theory (3 credits)

General Education: International

A survey of the principal artists, movements, theories, and artistic strategies since World War II in Europe and America. Important movements examined include the New York School, Neo-dada, Post-Painterly Abstraction, British and American Pop, Minimalism, Conceptual art, Earthworks and Environments, Performance Art, Neoexpressionism, and the various approaches within contemporary art.

Prereqs: One 200-level or 300-level art history elective, or Permission

ART 321 Graphic Design: Concepts (3 credits, max 6)

Advanced design problems that center on individual development and the exploration of contemporary design issues. The conceptual potential of words and images is emphasized. Individual and group work. Two 3-hour studios per week and assigned work.

Prereqs: ART 221 and ART 222, or Permission

ART 322 Graphic Design: Studio (3 credits, max 6)

Visual communication design and problem solving in the community environment; strategies for client interaction, project presentation and production preparation are practiced. Two 3-hour studios per week and assigned work.

Prereqs: ART 221 and ART 222, or Permission

ART 323 History of Typography (3 credits)

History and Theory of Typography: Historical and theoretical survey of typography and graphic technologies from the invention of writing to the present. The course begins with the study of writing before the printing press and continues detailing the origin of European typography and design for printing through the Industrial Revolution and the invention of photography. The study of typography in the modernist era follows, including close examination of Bauhaus and Neue Typographie, the Swiss Neue Graphik and subsequent developments in America and abroad. A detailed study of the practical, historical, and theoretical implications of digital typography will conclude the course. Typically Offered: Spring.

ART 330 Intermediate/Advanced Painting (3 credits)

Intermediate painting in oil, acrylic, watercolor, and gouache; emphasis on the aesthetic problems and the role of color. Advanced students emphasize individual conceptual approaches. Two 3-hour studios per week and assigned work. Typically Offered: Fall and Spring.

Prereqs: Art Core and ART 231 or Permission

ART 340 Intermediate/Advanced Sculpture (3 credits, max 9)

Intermediate level studio environment with emphasis on promoting tool safety, material exploration, creative autonomy, portfolio development, and comprehension of historical and contemporary issues relevant to studio projects and sculpture discourse. Two 3-hour studios per week and assigned work.

Prereqs: Art Core, ART 241 or Permission

ART 350 Intermediate/Advanced Printmaking (3 credits, max 9)

Advanced printmaking; further exploration of printmaking methods and materials; emphasis on individual development in conceptual and technical abilities. Two 3-hour studios per week and assigned work.

Prereqs: Art Core and ART 251 or permission

ART 360 Intermediate/Advanced Ceramics (3 credits, max 9)

Intermediate and Advanced level studio environment with further exploration of ceramic methods including wheel-thrown building techniques, kiln and studio procedures, creative autonomy, portfolio development, and comprehension of historical and contemporary issues relevant to studio projects and ceramics discourse. Two 3-hour studios per week and assigned work.

Prereqs: Art Core and ART 261; or Permission

ART 370 Interaction/Experiential Design: Concepts (3 credits)

Advanced design problems that center on individual development and the exploration of contemporary design issues surrounding user, visitor, and guest experiences. The conceptual potential of placemaking using both mobile and tablet devices within the built environment is emphasized, as is prototyping, testing, and revision. Individual and group work. Two 3-hour studios per week and assigned work. Typically Offered: Fall and Spring.

Prereqs: ART 216, ART 271 and ART 272; or Permission

ART 373 Interaction/Experiential Design: Studio (3 credits)

User Experience (UX) and User Interaction (UI) problem solving at an advanced level. In addition to design and development, strategies for client interaction, project presentation and production preparation are practiced. Two 3-hour studios per week and assigned work. Typically Offered: Varies.

Prereqs: ART 216, ART 271, and ART 272; or Permission.

ART 380 Digital Imaging (3 credits)

Computer imaging with emphasis on visual problem solving and design; development of professional techniques with industry standard software.

Prereqs: ART 216

ART 400 (s) Art Seminar (1-3 credits, max 6)**ART 403 (s) Workshop (1-16 credits, max arranged)**

Credit arranged.

Prereqs: Permission

ART 404 (s) Special Topics (1-16 credits)

Credit arranged

ART 405 (s) Professional Development (1-16 credits)

Credit arranged

ART 407 New Media (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Study, analysis, and critique of the cultural, technological, and aesthetic dimensions and practices of new media. The course entails a detailed examination of the genealogy, historical and cultural ramifications of the computer as an expressive medium. We will study the history of the computer and the digital, from its pre-conception in literature and science, to its various manifestations today in information, political, aesthetic, technological, and cultural contexts. Throughout the course students will analyze and evaluate the constantly changing provocations of new media in terms of communication, language, art, design, architecture, and the general ontological issues of time and space.

ART 409 Visual Studies (3 credits)

Examination, evaluation, and critique of the expanding interdisciplinary field of visual studies. Visual practices, technologies, communicative, and epistemological models and structures are studied in terms of their implications for art, design, architecture, and cultural and scientific practices and production in general. The historical, theoretical, and aesthetic provocations of visualization in such varied fields as biology, medicine, law, forensics, genetics, and information technologies is addressed as well as the cultural dimensions of the social ubiquitousness of the visual in general. Recommended preparation: ART 205.

Prereqs: 12 credits of Art History/Visual Culture courses

ART 410 Professional Practices (2 credits)

General Education: Senior Experience

Professional issues for studio artists and designers including obligations, duties, and responsibilities in practice, self-promotion, and career planning. Includes analysis of gallery operations.

Prereqs: Advanced standing or Permission

ART 488 Faculty Directed Internship (1-3 credits, max 6)

1-3 credits, max 6. Open only to art majors. Art faculty directed work on a professional project.

Prereqs: Successful completion of one 300-level studio sequence (6 credits), and advisor and directing faculty approval.

ART 490 BFA Art/Design Studio (6 credits, max 12)

General Education: Senior Experience

Open only to BFA studio art majors. Intensive tutorial studio closely monitored by all the faculty, culminating in development of a portfolio and a professional exhibition. Outside lectures and special events may be assigned. Twelve formal hours of studio per week plus outside work to equal 18 hours of involvement a week; field trips and guest lectures may be required.

Prereqs: Senior standing and completion of 15 cr in 300-level art courses with a minimum grade of 'C' and a minimum GPA of 2.75.

ART 495 Critical Art Writing Seminar (3 credits)

General Education: Senior Experience

Open only to B. F. A. Art and Design majors who have been admitted to the professional program through the B. F. A. Art and Design Review. Writing portfolio includes: visual analysis, short essay, statement of intent, artist's statements, and other pertinent types of writing.

Prereqs: Senior standing and completion of 15 cr. in 300-level art courses with a minimum grade of 'C' and a minimum GPA of 2.75

ART 497 (s) Practicum In Instruction (1-3 credits, max 6)

Tutorial and/or instructional services performed by advanced students under faculty supervision.

Prereqs: Permission

ART 498 (s) Internship (1-12 credits, max 12)

Graded P/F. Open to art majors only; no more than 6 cr may be counted toward art degree requirements. Work with professional artists. Graded Pass/Fail.

Prereqs: One 300-level studio sequence (6 credits) and permission of department chair

ART 499 (s) Directed Study (1-3 credits, max 9)

Individual study areas selected by the student and approved by the faculty; it is the student's responsibility to select a study area and prepare a semester study program; the student contacts one of the art faculty who agrees to direct the study; it is the student's responsibility to initiate the study program and to maintain regular contact with the faculty member who has agreed to direct the study.

Prereqs: Completion of one 300-level studio sequence (6 cr) and Permission

ART 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ART 501 (s) Seminar (1-16 credits)

Credit arranged

ART 502 (s) Directed Study (1-16 credits)

Credit arranged

ART 503 (s) Workshop (1-16 credits)

Credit arranged

ART 504 (s) Special Topics (1-16 credits)

Credit arranged

ART 505 (s) Professional Development (1-16 credits)

Credit arranged. Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward graduate degree program, but may be used in a fifth-year program. Additional projects/assignments required for graduate credit.

ART 507 (s) Art Seminar (3 credits, max 6)

Open only to art majors. Seminar in professional art concerns: guest artist programs, University Gallery activities, including field trips. One 2-hour seminar per week and assigned work.

ART 508 (s) Readings in Art and Design (3 credits)

Exploration and analysis of issues surrounding contemporary and historical practices of artistic production. Open to all graduate students. Seniors with a sufficient GPA or higher may enroll per UI catalog and College of Graduate Studies requirements with instructor permission.

ART 513 Pedagogy Seminar (3 credits, max 6)

This seminar is designed for graduate students teaching and/or interested in teaching in higher-ed creative classrooms. Assignments and discussions designed to further critical awareness and build adaptive strategies that foster engagement in a contemporary, creative classroom. Typically Offered: Fall.

Prereqs: Instructor permission

ART 515 (s) Art Faculty Studio (3-6 credits, max 12)

Open only to art majors. Studio research taken with support of art and design faculty group; at least three intensive studio critique presentations required each semester.

ART 516 (s) MFA Art Studio (3-6 credits, max 9)

Open only to MFA art majors. Studio research taken from two or more art faculty members.

ART 521 (s) MFA Individual Critique (3 credits, max 9)

Open only to MFA art majors. Studio research taken from individual art faculty members; individual instruction and critiques. One hour per week of critique session and 8 hours per week of individual studio research.

ART 590 (s) MFA Thesis Exhibition (4-8 credits, max 20)

Open only to MFA majors. Studio research directly related to preparation of MFA "Exhibition and Statement."

ART 597 (s) Practicum (3 credits, max 6)

Hands-on experience in classroom teaching and gallery practice conducted under supervision of faculty or gallery director. Normally requires 4-6 hours per week in class and assigned work.

Prereqs: Major in the College of Art and Architecture or permission of individual faculty and art graduate coordinator

ART 598 (s) Internship (1-6 credits, max 6)

Open only to art majors. Work with professional artists.

Prereqs: Permission of major professor and department chair

ART 599 (s) Non-thesis Master's Research (1-16 credits)

Credits arranged

Athletic Training (AT)

AT 502 (s) Directed Study (1-16 credits)

Credit arranged

AT 504 (s) Special Topics (1-16 credits)

Credit arranged

AT 506 Clinical Anatomy I (3 credits)

Theory and practice of clinical anatomy as it pertains to the lower extremity through the thoracic spine.

AT 507 Emergency Management and Care of Injuries and Illnesses (3 credits)

Theory and practice of recognition, treatment, and prevention of emergent and/or acute injuries and illnesses.

AT 508 Evaluation and Diagnosis of Injuries and Illnesses I (4 credits)

Theory and practice of musculoskeletal evaluation and diagnosis as it pertains in the lower extremity through the thoracic spine.

AT 509 Principles of Rehabilitation (3 credits)

Theory and practice of the scientific foundations of musculoskeletal rehabilitation.

AT 510 Therapeutic Modalities (2 credits)

Theory and practice of therapeutic modalities including thermotherapy, cryotherapy, and mechanical modalities.

AT 511 Ethics and Administration in Athletic Training (3 credits)

Theory and practice of ethics and administration in athletic training.

AT 512 Research Methods & Statistics I (3 credits)

Theory and application of research methods for the health professions, including research design, research question development, ethical considerations, methods of measurement, and critical appraisal of the current literature.

AT 513 General Medicine for Athletic Trainers (3 credits)

Theory and practice of general medical conditions related to athletic training.

AT 514 Psychology of Injury and Referral (3 credits)

Theory and practice of the psychology of injury and referral in Athletic Training.

AT 516 Diagnostic Imaging and Testing in Athletic Training (1 credit)

This course is designed to familiarize the athletic training student with diagnostic testing and imaging techniques. Conventional radiography, magnetic resonance imaging (MRI) and computerized tomography (CT), as well as various selected clinical diagnostic and laboratory tests and with selected procedures as diagnostic tools with different purposes, clinical capabilities and limitations. Typically Offered: Summer.

Prereqs: AT 508

AT 520 Clinical Education I (2 credits)

Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level I clinical educational competencies.

AT 521 Clinical Experience I (4 credits)

Clinical practice in athletic training under the direct supervision of a Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 522 Clinical Education II (2 credits)

Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level I clinical educational competencies.

AT 523 Clinical Experience II (4 credits)

Clinical practice in athletic training under the direct supervision of a Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 531 Clinical Anatomy II (3 credits)

Theory and practice of clinical anatomy as it pertains to the head, neck and upper extremity through the thoracic spine.

AT 532 Evaluation and Diagnosis of Injuries and Illnesses II (4 credits)

Theory and practice of musculoskeletal evaluation and diagnosis as it pertains in the upper extremity through the thoracic spine.

AT 533 Integrated Rehabilitation Techniques (3 credits)

Theory and practice of rehabilitation techniques as applied to individual physical pathologies.

AT 534 Therapeutic Modalities II (2 credits)

Theory and practice of therapeutic modalities including electrotherapy.

AT 535 Seminar in Athletic Training (1 credit)

Seminar addresses a year-one comprehensive exam process. All topics learned in the first year of the program are eligible for testing.

AT 536 Research Methods & Statistics II (3 credits)

This course introduces quantitative research design, methods of measurement, and data analysis skills for health care professionals. Students will develop an understanding of quantitative design, while also developing skills to perform and interpret basic data analysis procedures relevant to athletic training.

AT 540 Pharmacology for Athletic Trainers (3 credits)

Clinical pharmacology for athletic trainers as it relates to athletic training educational competencies.

AT 541 Seminar in Athletic Training II (2 credits)

Seminar addresses a year-two comprehensive exam process. All topics learned in both years of the program are eligible for testing.

AT 542 Scientific Inquiry and Research Presentation (3 credits)

This course will provide students with the foundational knowledge to evaluate scholarship and prepare works for scholarly dissemination. MSAT students will present their research findings to the group of faculty and students. All presentations will be graded by the faculty and be accepted or rejected.

AT 543 Neuroscience for Athletic Trainers (3 credits)

This course will provide students foundational knowledge of neuroscience and how its application for common neuromuscular conditions (e. g. acute and chronic pain, somatic dysfunction, and motor neuron disorders) can be utilized in the clinical practice of athletic training to improve therapeutic outcomes. Students will examine and synthesize current research and case studies based on neuroscience principles and applications to ascertain the most appropriate therapeutic interventions to be utilized to improve patient healing and satisfaction.

AT 547 Critical Issues in Athletic Training Clinical Practice (3 credits)

This course prepares students to recognize challenges and develop strategies for solving issues common in AT clinical practice.

AT 550 Clinical Education III (2 credits)

Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level II clinical educational competencies.

AT 551 Clinical Experience III (4 credits)

Clinical practice in athletic training under the direct supervision of a Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 552 Clinical Education IV (2 credits)

Practice of athletic training clinical skills under the direct supervision of a Preceptor with emphasis on the Level II clinical educational competencies.

AT 553 Clinical Experience IV (4 credits)

Clinical practice in athletic training under the direct supervision of a Preceptor with emphasis on patient care and the safe and appropriate use of skills and techniques.

AT 587 Prevention and Health Promotion in Athletic Training (3 credits)

This course prepares AT students to develop and implement strategies to prevent the incidence and/or severity of injuries and illnesses and optimize patients overall health quality of life.

AT 600 Doctoral Research and Dissertation (1-45 credits)**AT 604 (s) Special Topics (1-16 credits)**

Credit arranged

AT 606 Professional and Post-Professional Education in Athletic Training (3 credits)

This course is designed to introduce historical background of professional and post-professional education for health care professions. Theoretical foundations and models of health care education will be compared and contrasted. The impact of educational models to health care will be explored. Development of criteria to govern the practicing professional in their chosen residency will be accomplished.

Prereqs: Permission

AT 607 Leadership & Mentoring in AT Clinical Practice (3 credits)

This course has been designed to initiate leadership and mentoring in AT clinical practice. Topics relating to leadership and mentoring will be discussed.

AT 610 Advances in Manual Therapy (3 credits)

Selected readings from peer-reviewed articles will be examined and discussed. Translation of research findings to current clinical practice will be emphasized.

Prereqs: Permission

AT 611 Integrative Manual Therapy (3 credits)

Translation of research findings to current clinical practice will be emphasized. Novel intervention theories, techniques, and strategies, will be presented, discussed, and practiced as related to patient care and practice based evidence.

Prereqs: Permission

AT 620 Research Methods and Evidence Based Practice in Patient Care (3 credits)

This course introduces common research performed in patient care. Development of in-depth understanding in areas and types of research underlying quantitative research design will be explored. Introduction to critiquing literature for the purpose of developing a theoretical framework will be included.

Prereqs: Permission

AT 621 Action Research in Patient Care (2 credits)

This course sets the foundation for action research in clinical practice. Development of a research question and justification with literature review will be employed. Purpose and methods of institutional review will be evaluated. Further discussion will elucidate the importance of becoming a scholarly practitioner.

Prereqs: Permission

AT 622 Designing and Conducting Applied Research in Patient Care (2 credits)

This continues the process of applied research in clinical practice. Development of methods to test a chosen hypothesis will be created. Exploration of statistical methods to test the clinician's hypothesis will be compared. Dissertation proposal will developed.

Prereqs: AT 620 and AT 621

AT 623 Introduction to Survey and Qualitative Research Design in Patient Care (3 credits)

This course introduces common qualitative methodologies and survey research design in patient care.

Prereqs: AT 620, AT 621, and AT 622

AT 624 Advanced Quantitative Data Analysis and Interpretation in Patient Care (3 credits)

This course provides an in-depth analysis of quantitative research design and data analysis for health care professionals. The goal is to prepare health care students to apply quantitative research design and data analysis skills in patient care. Students will develop sound understanding of research design and be able to utilize regression, factor analysis, and multivariate data analysis skills to answer important research questions in patient care. Students will learn to interpret and disseminate their findings to other health care professionals.

Prereqs: AT 620, AT 621, AT 622, and AT 623

AT 625 Scientific Writing for Publication in Patient (3 credits)

This course is a continuation of clinical research in healthcare and the completion of the Culminating Clinical Project (CCP).

Prereqs: AT 620, AT 621, AT 622, AT 623, and AT 624

AT 630 Holistic Foundations of Pain in Patient Care (2 credits)

This course explores current topics in clinical practice, related to the foundations of pain in the human body that influence quality care and methods of measurement and evaluation for quality assessment. Exploration to common instrumentation utilized by clinicians will be discussed and compared to literature utilizing the instruments for research purposes.

Prereqs: Permission

AT 631 Theory and Application of Current and Novel Paradigms in Patient Care (2 credits)

Building on foundation of AT 630, this course illustrates the implications of holistic theories of pain by exploring and integrating appropriate novel interventions within efficacious patient care.

Prereqs: Permission

AT 632 Integrative Patient Care for the Spine and Pelvic Girdle (3 credits)

This course explores current topics and causes of musculoskeletal injuries to the spine and pelvis. An in-depth look at epidemiology, biomechanics and other topics related to musculoskeletal injuries of the lumbar spine and pelvis will be emphasized.

Prereqs: Permission

AT 633 Application of Advanced Practice Skills: A Practice-Based Approach (3 credits)

This course explores current topics of interest areas of practicing professionals. An in-depth look at theory, research, and art of the chosen interest area will be explored. Focus will be in critically analyzing areas such as; anatomy, pathophysiology, biomechanics, theoretical framework or ethical principles to explain the students chosen topic.

Prereqs: Permission

AT 634 Introduction to Quantitative Data Analysis and Interpretation in Patient Care (2 credits)

This course introduces quantitative research design, methods of measurement, and introductory data analysis skills for health care professionals. The goals are for students to develop an introductory understanding of quantitative design, develop skills to perform basic data analysis procedures, and begin to develop the skills to interpret findings from quantitative data analysis research projects.

Prereqs: Permission

AT 635 Intermediate Quantitative Data Analysis and Interpretation in Patient Care (2 credits)

This course provides an in-depth analysis of quantitative research design and data analysis for health care professionals. The goal is to prepare health care students to apply quantitative research design and data analysis skills in patient care. The goals are for students to develop sound understanding of research design and be able to utilize correlational, reliability, and univariate data analysis skills to answer important research questions in patient care. Students will learn to interpret and disseminate their findings to other health care professionals.

Prereqs: Permission

AT 640 Clinical Residency and Analysis of Patient Care I (6 credits)

This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures. Impact of the skill improvement to the organization and profession will be demonstrated.

Prereqs: Permission

AT 641 Clinical Residency and Analysis of Patient Care II (6 credits)

This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures. Impact of the skill improvement to the organization and profession will be demonstrated.

Prereqs: Permission

AT 642 Clinical Residency and Analysis of Patient Care III (6 credits)

This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures. Impact of the skill improvement to the organization and profession will be demonstrated.

Prereqs: Permission

AT 643 Clinical Residency and Analysis of Patient Care IV (6 credits)

This course is designed to critically assess clinical skills and improve patient care of the practicing healthcare professional in a mentor guided model. Improvement in selected areas of clinical practice will be measured via formative and summative assessment that employs quantitative measures do demonstrate improved patient care. Impact of the skill improvement to the organization and profession will be demonstrated. Summary of all impact of clinical residencies will be presented to the participant's organization

Prereqs: Permission

Bioinformatics/Computational Biology (BCB)

BCB 404 (s) Special Topics (1-16 credits, max arranged)**BCB 500 Master's Research and Thesis (1-16 credits)**

Credit arranged

BCB 501 (s) Seminar (1-16 credits, max arranged)

Credit arranged. Students are required to attend all of the invited speaker presentations in the IBEST/CMCI/BCB seminar series for the semester they are enrolled. Students who miss one or more presentations are expected to attend an alternative seminar approved by the instructor. Additional meetings may be required by the instructor.

BCB 502 (s) Directed Study (1-16 credits)

Credit arranged

BCB 503 (s) Workshop (1-16 credits)

Credit arranged

BCB 504 (s) Special Topics (1-16 credits)

Credit arranged

BCB 506 Laboratory Experience in the Biological Sciences (1-16 credits, max arranged)

Credit arranged. Hands-on activities in an active research laboratory whose central research interests are in the biological or biochemical sciences.

Prereqs: Admission to BCB program.

BCB 507 Laboratory Experience in the Computational Sciences (1-16 credits, max arranged)

Credit arranged. Hands-on activities in an active research laboratory whose central research interests are in the computational sciences.

Prereqs: Admission to BCB program.

BCB 508 Laboratory Experience in Mathematics or Statistics (1-16 credits, max arranged)

Credit arranged. Hands-on activities in an active research laboratory whose central research interests are in the mathematics or statistics.

Prereqs: Admission to BCB program.

BCB 520 Foundations of Data Visualization (3 credits)

This class will help students establish a foundational understanding of data visualization. We will consider how data type (including tabular, network, and spatial data) interacts with visualization task to guide design choices. Diverse types of visual encodings and how they relate to human perception will be presented, along with practical exercises using the R programming language. Upon completion of the course, students will understand why particular visualization approaches are effective for a given data set and how to implement those visualizations using R. The course is designed to be "discipline agnostic": each student is encouraged to use data sets that they deem important/interesting. The goal is to have students learn how to develop visualizations that are relevant to their own disciplinary interests. Typically Offered: Spring.

Prereqs: INTR 509 or STAT 251

BCB 521 Communicating with Data (2 credits)

Students are taught writing and presentation skills to improve their communication of data-driven insights to specialist and lay audiences. The course emphasizes reproducible research practices, including literate programming (Quarto / Markdown) and version control (GitHub). Course content includes the conceptual foundations of communicating with data along with written and verbal assignments using data sets individualized to each student's interest. Typically Offered: Spring.

Prereqs: INTR 509 or BS degree

BCB 522 Data Science Portfolio (1 credit)

This course provides feedback, review, and approval of the student's online data science portfolio. This portfolio is intended to represent the body of work accumulated by the student over the course of the certificate in Professional Applications of Data Science. It should contain examples of novel data products (such as FAIR data sets), analyses, and visualizations. All elements of the portfolio will be hosted online (likely in a GitHub repository or professional website), be open source, and demonstrate best practices of literate programming and reproducible research. Typically Offered: Varies.

Prereqs: INTR 509 or BS degree

BCB 597 (s) Practicum (1-16 credits)

Credit arranged

BCB 598 (s) Internship (1-16 credits)

Credit arranged

BCB 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

BCB 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Biological Engineering (BE)

BE 142 Introduction to Biological Engineering (2 credits)

An introduction to biological engineering and the engineering principles used to solve biological engineering problems. Fields of study within biological engineering will be discussed including agricultural, bioenergy, biomedical, bioprocess, ecohydrological and environmental engineering. Students will work on a team-based engineering project. One lecture and one 3-hour lab per week.

BE 204 (s) Special Topics (1-16 credits)

Credit arranged

BE 242 Biological Engineering Analysis and Design (3 credits)

Methods of analyzing and solving engineering problems; introduction to elements of biological engineering design; use of computers in engineering problem solving.

Prereqs: MATH 170

Coreqs: MATH 175

BE 299 (s) Directed Study (1-16 credits)

Credit arranged

BE 361 Biotransport Processes (3 credits)

The course will familiarize students with transport phenomena processes involved in bio-related fields spanning from agricultural to environmental and medical to pharmaceutical.

Prereqs: ENGR 320 and ENGR 335

BE 398 (s) Engineering Cooperative Internship (1-16 credits)

Credit arranged. Supervised internship in professional engineering settings, integrating academic study with work experience; details of the co-op to be arranged with supervising professor before the start of the co-op; requires written report. Graded P/F. Cannot be used for technical elective.

Prereqs: Permission

BE 404 (s) Special Topics (1-16 credits)

Credit arranged

BE 411 Energy and Environmental Auditing (3 credits)

Joint-listed with BE 511

This course provides an understanding of energy usage, energy management, and impact of industrial processes on environment. The course covers instrumentation for measuring energy and emissions, diagnostics for energy wastage, environmental life cycle analysis, assessment tools, and writing recommendations. The graduate version of the course includes a case study and in-depth analysis of uncommon energy saving recommendations.

Prereqs: ENGR 240 and (ENGR 320 or ME 322), or Permission

BE 421 Image Processing and Computer Vision (3 credits)

Joint-listed with BE 521

Fundamentals of digital image processing, analysis, feature recognition, and computer vision applied to areas of Biological Engineering including agricultural, environmental and biomedical applications. This course covers camera model, digital image processing and image analysis techniques for computer vision. Additional project components required for graduate credit.

Prereqs: (BE 242 and MATH 275) or permission

BE 422 Tissue Biomechanics (3 credits)

Joint-listed with BE 522

This course explores the structure and mechanical properties of hard and soft tissues. The main focus will be on musculoskeletal tissues and may include topics in bone, skin, cartilage, muscle, tendon and ligament. Structure-function relationships at a range of anatomical levels, from the cell to the whole tissue, will be examined. Journal articles will be used to discuss current research in tissue biomechanics. Additional projects/ assignments are required for graduate credit. Recommended Preparation: Mechanics of Materials

Prereqs: Junior or Senior standing; or Instructor Permission

BE 423 Tissue Engineering and Regenerative Medicine (3 credits)

Joint-listed with BE 523

This course explores the principles, strategies, and tools used in the field of tissue engineering and regenerative medicine. Topics may include the application of biomaterials, stem cells, and bioreactors for restoring, maintaining and improving tissue function. Journal articles will be used to discuss current research in tissue engineering and regenerative medicine. Additional projects/assignments are required for graduate credit.

Prereqs: Junior or Senior standing; or Instructor Permission

BE 433 Bioremediation (3 credits)

Joint-listed with BE 533

Theory and practice of bioremediation as applied to toxic and hazardous wastes, including reaction kinetics, reaction stoichiometry, microbiology, and design of ex- and in-situ processes. Graduate credit requires additional design project. One or two field trips.

Prereqs: BIOL 115, BIOL 115L, and MATH 170, or Permission

BE 441 Instrumentation and Measurements (3 credits)

Joint-listed with BE 541

Sensing elements, signal conditioning, data output, and control.

Additional projects/assignments required for graduate credit. Two lectures and one 3-hour lab per week. Cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 240

Coreqs: STAT 301

BE 450 Environmental Hydrology (3 credits)

Carries no credit after BE 355 or CE 325. The objective of this course is to provide a comprehensive understanding of the hydrologic processes associated with the environmental processes. Includes components of the hydrologic cycle, analysis of precipitation and run off, evapotranspiration, routing, peak flow, infiltration, soil and water relationships, snowmelt, and frequency analysis. (Spring only)

Prereqs: MATH 170

BE 453 Northwest Climate and Water Resources Change (3 credits)

Joint-listed with BE 553

Examines the relationship between climate and water resources in the Northwest, including historical and potential changes, and comparisons with other US regions. Scientific literature is read and discussed. Quantitative tools are developed for modeling the process physics and conducting statistical analyses. Historical data are analyzed. Additional project components required for graduate credit.

Prereqs: STAT 301 or permission

BE 461 Bioprocess Engineering (3 credits)

Joint-listed with BE 561

This course covers advanced applications of biological sciences, processing principles applied to the analysis and design of handling, processing, and separation of bioproducts. Students complete several hands-on laboratory modules in addition to a bioprocess design project. Additional work required for graduate credit.

Prereqs: Permission

BE 462 Electric Power and Controls (3 credits)

Design, selection, and use of electrical equipment and electric power systems for application to biological systems; design and use of electrical, electronic, and other feedback control systems for use with biological systems. Course includes advanced biological sciences applications. Two lectures and one 3-hour lab per week. Typically Offered: Spring.

Coreqs: MATH 310 and PHYS 212

BE 478 Engineering Design I (3 credits)

General Education: Senior Experience

The capstone design sequence for biological and agricultural engineering majors. Course topics include research, design, experimental methods, specifications, prototyping, and verification; report writing, documentation and oral presentations. Topics, from industrial sponsorship, are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints including environmental concerns, sustainability, ethical, safety, manufacturability, social and political considerations.

Prereqs: BE 242, ENGR 320, ENGR 335, and ENGR 350**BE 479 Engineering Design II (3 credits)**

General Education: Senior Experience

Continuation of the capstone design sequence for biological and agricultural engineering majors. Course topics include research, design, experimental methods, specifications, prototyping, and verification; report writing, documentation and oral presentations. Topics, from industrial sponsorship, are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints including environmental concerns, sustainability, ethical, safety, manufacturability, social and political considerations

Prereqs: BE 478**BE 485 Fundamentals of Bioenergy and Bioproducts (3 credits)**

Joint-listed with BE 585

Review of current technology for producing energy and products from biological materials. Discussion of economic, social, and political aspects and future prospects for petroleum displacement. Additional projects/ assignments required for graduate credit. Recommended Preparation: Organic Chemistry.

Prereqs: CHEM 111, CHEM 111L**Coreqs:** ENGR 320 or Permission**BE 491 Senior Seminar (1 credit)**

General Education: Senior Experience

Professional aspects of the field, employment opportunities, and preparation of occupational inventories. Graded P/F.

Prereqs: Senior standing.**BE 492 Biofuels (3 credits)**

Joint-listed with BE 592

Basic principles for the production and utilization of biobased fuels; processing techniques and chemistry; fuel properties and utilization.

Additional projects/assignments required for graduate credit.

Recommended Preparation: Organic Chemistry.

Prereqs: CHEM 111, CHEM 111L**Coreqs:** ENGR 320 or Permission**BE 494 Thermochemical Technologies for Biomass Conversion (3 credits)**

Introduce the fundamentals of biomass conversion technologies for biofuels and bioenergy. Specific topics include biomass preparation/ pretreatment, pyrolysis, gasification, direct liquefaction, and economic factors in thermochemical conversion of biomass. Advances of the technologies will be brought to current through literature reviews. A semester long course project is required if taken as a graduate level course. Recommended Preparation: Organic Chemistry, Chemical Reaction Engineering, Engineering Thermodynamics.

Prereqs: CHEM 277 and CHEM 278.**Coreqs:** ENGR 320 or Permission**BE 499 (s) Directed Study (1-16 credits)**

Credit arranged

BE 500 Master's Research and Thesis (1-16 credits)

Credit arranged

BE 501 (s) Seminar (1 credit, max 2)

Cross-listed with CHE 501

Graded P/F.

Prereqs: Permission**BE 502 (s) Directed Study (1-16 credits)**

Credit arranged

BE 504 (s) Special Topics (1-16 credits)

Credit arranged

BE 511 Energy and Environmental Auditing (3 credits)

Joint-listed with BE 411

This course provides an understanding of energy usage, energy management, and impact of industrial processes on environment. The course covers instrumentation for measuring energy and emissions, diagnostics for energy wastage, environmental life cycle analysis, assessment tools, and writing recommendations. The graduate version of the course includes a case study and in-depth analysis of uncommon energy saving recommendations.

Prereqs: ENGR 240 and (ENGR 320 or ME 322), or Permission**BE 521 Image Processing and Computer Vision (3 credits)**

Joint-listed with BE 421

Fundamentals of digital image processing, analysis, feature recognition, and computer vision applied to areas of Biological Engineering including agricultural, environmental and biomedical applications. This course covers camera model, digital image processing and image analysis techniques for computer vision. Additional project components required for graduate credit.

Prereqs: (BE 242 and MATH 275) or permission**BE 522 Tissue Biomechanics (3 credits)**

Joint-listed with BE 422

This course explores the structure and mechanical properties of hard and soft tissues. The main focus will be on musculoskeletal tissues and may include topics in bone, skin, cartilage, muscle, tendon and ligament. Structure-function relationships at a range of anatomical levels, from the cell to the whole tissue, will be examined. Journal articles will be used to discuss current research in tissue biomechanics. Additional projects/ assignments required for graduate credit. Recommended Preparation: Mechanics of Materials

BE 523 Tissue Engineering and Regenerative Medicine (3 credits)

Joint-listed with BE 423

This course explores the principles, strategies, and tools used in the field of tissue engineering and regenerative medicine. Topics may include the application of biomaterials, stem cells, and bioreactors for restoring, maintaining and improving tissue function. Journal articles will be used to discuss current research in tissue engineering and regenerative medicine. Additional projects/assignments required for graduate credit.

BE 524 Sustainable Food-Energy-Water Systems (3 credits)

Cross-listed with ME 524

This course covers sustainability analysis, life cycle assessment, and applications of sustainability across design and manufacturing processes, as well as food-energy-water systems, which establishes the concept of sustainability, and sustainable engineering. This course introduces the intersection of sustainability and food-energy-water systems through sustainable development, sustainability principles, and environmental analysis. Foundational knowledge in physics, chemistry, calculus, engineering materials; engineering design and manufacturing; foundational knowledge in business operations and supply chain. Typically Offered: Spring.

BE 533 Bioremediation (3 credits)

Joint-listed with BE 433

Theory and practice of bioremediation as applied to toxic and hazardous wastes, including reaction kinetics, reaction stoichiometry, microbiology, and design of ex- and in-situ processes. Graduate credit requires additional design project. One or two field trips.

Prereqs: BIOL 115, BIOL 115L and MATH 170, or Permission**BE 541 Instrumentation and Measurements (3 credits)**

Joint-listed with BE 441

Sensing elements, signal conditioning, data output, and control. Additional projects/assignments required for graduate credit. Two lectures and one 3-hour lab per week. Cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 240**Coreqs:** STAT 301**BE 553 Northwest Climate and Water Resources Change (3 credits)**

Joint-listed with BE 453

Examines the relationship between climate and water resources in the Northwest, including historical and potential changes, and comparisons with other US regions. Scientific literature is read and discussed.

Quantitative tools are developed for modeling the process physics and conducting statistical analyses. Historical data are analyzed. Additional project components required for graduate credit.

Prereqs: STAT 301 or permission**BE 561 Bioprocess Engineering (3 credits)**

Joint-listed with BE 461

This course covers advanced applications of biological sciences, processing principles applied to the analysis and design of handling, processing, and separation of biomaterials. Students complete several hands-on laboratory modules, in addition to a bioprocess design project. Additional work is required for graduate credit.

Prereqs: Permission**BE 585 Fundamentals of Bioenergy and Bioproducts (3 credits)**

Joint-listed with BE 485

Review of current technology for producing energy and products from biological materials. Discussion of economic, social, and political aspects and future prospects for petroleum displacement. Additional projects/assignments required for graduate credit. Recommended Preparation: Organic Chemistry.

Prereqs: CHEM 111, CHEM 111L**Coreqs:** ENGR 320 or Permission**BE 592 Biofuels (3 credits)**

Joint-listed with BE 492

Basic principles for the production and utilization of biobased fuels; processing techniques and chemistry; fuel properties and utilization. Additional projects/assignments required for graduate credit.

Recommended Preparation: Organic Chemistry.

Prereqs: CHEM 111, CHEM 111L**Coreqs:** ENGR 320 or Permission**BE 594 Thermochemical Technologies for Biomass Conversion (3 credits)**

Joint-listed with BE 494

Introduce the fundamentals of biomass conversion technologies for biofuels and bioenergy. Specific topics include biomass preparation/pretreatment, pyrolysis, gasification, direct liquefaction, and economic factors in thermochemical conversion of biomass. Advances of the technologies will be brought to current through literature reviews. A semester-long course project is required if taken as a graduate-level course. Recommended Preparation: Organic Chemistry, Chemical Reaction Engineering, Engineering Thermodynamics.

Prereqs: CHEM 277 and CHEM 278**Coreqs:** ENGR 320 or Permission**BE 598 (s) Internship (1-16 credits)**

Credit arranged

BE 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission**BE 600 Doctoral Research and Dissertation (1-45 credits)**

Credit arranged

Biology (BIOL)

BIOL 101 Opportunities in Biological Sciences (1 credit)

This course will provide a first-year experience for new students by introducing them to departmental faculty and areas of study within biological sciences. Students will explore their interests and opportunities available within the department and university. Graded Pass/Fail. Typically Offered: Fall.

BIOL 102 Biology and Society (3 credits)

General Education: Natural/Integrated Science

Not open to majors or for minor credit in the department of Biological Sciences. Study of ecology, evolution, cells, heredity, and human body processes with a focus on connecting to issues in society. Three lectures per week.

BIOL 102L Biology and Society Lab (1 credit)

General Education: Natural/Integrated Science

Not open to majors or for minor credit in the department of Biological Sciences. The lab follows Biology 102 lecture topics and offers hands-on practice and experimentation with core course concepts. It is strongly recommended that the lecture and lab be taken in the same semester. One 3-hour lab per week. Typically Offered: Fall and Spring.

BIOL 114 Organisms and Environments (4 credits)

General Education: Natural/Integrated Science

Topics include an overview of ecology and a detailed foundation in evolutionary processes and the diversity of life; intended for students in biology-related majors. Three lectures and one 3-hour lab per week. Typically Offered: Fall and Spring.

BIOL 115 Cells and the Evolution of Life (3 credits)

General Education: Natural/Integrated Science

This course provides a detailed foundation of biomolecules, the cell, metabolism, and heredity; intended for students in biology-related majors. Three lectures per week. Typically Offered: Fall and Spring.

Prereqs: CHEM 101 or CHEM 111**BIOL 115L Cells and the Evolution of Life Laboratory (1 credit)**

Gen Ed: Natural and Applied Sciences Laboratory for introductory biology; experiments are designed to teach problem solving, scientific methods and the aspects of biology related to the cell.

Prereqs or Coreqs: BIOL 115

BIOL 151 Intro to Health Professions (1 credit)

This course is primarily for first- and second-year students, but all students interested in healthcare careers are welcome. The primary content of this course is centered on a series of presentations by guests from a variety of health professions, ranging from occupational therapy to dentistry. Students will learn about the presenters' educational process and personal journey to become a professional in their chosen field, as well as the responsibilities, professional interactions, joys, and challenges of working in that field. Discussions and assignments are designed to broaden the perspective of the healthcare field for the student, and to begin preparing them to be successful applicants in their chosen field. This is a dynamic course and the content varies from one year to the next due to the availability of guest speakers and number of students registered.

BIOL 204 (s) Special Topics (1-16 credits)

Credit arranged

BIOL 213 Structure and Function Across the Tree of Life (4 credits)

Comparative study of morphological and physiological adaptations that have evolved across the tree of life, with the focus of the course split equally between animals and plants. Three lectures and one 3-hour lab per week. Typically Offered: Spring semester.

Prereqs: BIOL 114

BIOL 227 Anatomy and Physiology I (4 credits)

Study of the general organization of the human body and its function, followed by more specific study of the anatomy and physiology of the integumentary, skeletal, muscular, cardiovascular, and respiratory systems. Labs include anatomical models, prosected cadavers, and physiological data collection software. Three lectures and one 3-hour lab per week. (Fall only)

Prereqs: BIOL 102 or BIOL 115

BIOL 228 Anatomy and Physiology II (4 credits)

Continuation of the study of the organization of the human body and its function, including specific study of the anatomy and physiology of the nervous, endocrine, digestive, urinary, and reproductive systems. Labs include anatomical models, prosected cadavers, and physiological data collection software. Three lectures and one 3-hour lab per week. (Spring only)

Prereqs: BIOL 227

BIOL 250 General Microbiology (3 credits)

General Education: Natural/Integrated Science

Introduction to nature and activity of bacteria and other microorganisms; their importance in all life systems. Three hours of lecture per week. (Fall only)

Prereqs: BIOL 115, BIOL 115L and either CHEM 101 and CHEM 101L or CHEM 111 and CHEM 111L

BIOL 255 General Microbiology Lab (2 credits)

General Education: Natural/Integrated Science

Training in the handling of microscopes, basic lab equipment, and manipulation of microbes. Two 2-hour labs per week. Typically Offered: Fall and Spring. **Prereqs** or

Coreqs: BIOL 250

BIOL 299 (s) Directed Study (1-16 credits)

Credit arranged

BIOL 300 Survey of Biochemistry (3 credits)

Carries no credit after BIOL 380. Survey of biochemical principles and the molecular structure and function that describe the chemical basis of life. (Fall only)

Prereqs: CHEM 101 and CHEM 101L or CHEM 111 and CHEM 111L

Coreqs: CHEM 275 or CHEM 277

BIOL 301 Undergraduate Research (0-4 credits, max 8)

Undergraduate research for students without senior standing. BIOL 301 cannot be used for upper-division elective requirement credit in degrees offered by the Department of Biological Sciences.

Prereqs: Permission

BIOL 310 Genetics (3 credits)

Genetic mechanisms in animals, plants, and microorganisms. Three hours of lecture per week. (Fall only)

Prereqs: BIOL 115 and BIOL 115L or BIOL 250

BIOL 312 Molecular and Cellular Biology (3 credits)

Current theory and experimental basis of the structure/function of eukaryotic cells. Topics include plasma membrane, organelles, cytoskeleton and cell mobility, the nature of genes, gene expression, DNA replication and cellular reproduction, and signal transduction. Three one-hour lectures per week. Recommended: CHEM 275 or 277 Typically Offered: Spring.

Prereqs: BIOL 115/BIOL 115L and one of the following: BIOL 310 or GENE 314 or BIOL 250 or BIOL 380.

BIOL 313 Molecular and Cellular Laboratory (1 credit)

Laboratory experiments and techniques related to molecular and cellular biology. One 3-hour lab per week. (Spring only)

Coreqs: BIOL 312

BIOL 314 Ecology and Population Biology (4 credits)

Population genetics, population ecology, species interactions, community ecology, biodiversity, and data analysis. Three lectures and one 3-hour lab per week. (Spring only)

Prereqs: BIOL 114 and BIOL 115, BIOL 115L; STAT 251 or STAT 301; and MATH 160 or MATH 170

BIOL 315 Genetics Lab (1 credit)

Laboratory on genetic mechanisms in animals, plants, and microorganisms. One 3-hour lab per week. (Fall only)

Prereqs: BIOL 115 or BIOL 250

Coreqs: BIOL 310

BIOL 340 Pathophysiology (3 credits)

This course will cover the physiological basis for altered health, the study of the structural and functional changes in the body leading to disease states. Case studies will be presented and discussed in class to apply and understand the material learned. Typically Offered: Spring.

Prereqs: BIOL 115, BIOL 115L, BIOL 227

Coreqs: BIOL 228

BIOL 350 Microbiomes (3 credits)

The study of microbiomes – microbial communities that may be host-associated or not – has exploded in the past decade. It is now abundantly clear that the interactions within microbiomes and between the microbiomes and their host greatly affect function. This course covers the evolution and ecology of microbial communities and how these dynamics and the resulting functions affect the environment or host they live in. Typically Offered: Spring.

Prereqs: BIOL 250

BIOL 380 Biochemistry I (4 credits)

Carries one credit after Biol 300. Introduction to the structure and function of major molecular constituents of living systems. Emphasis on proteins, enzyme kinetics and catalysis, and carbohydrate metabolism. Three hours of lecture and one hour of interactive problem solving per week. (Fall only)

Prereqs: CHEM 112, CHEM 112L and CHEM 277

BIOL 382 Biochemistry I Laboratory (2 credits)

Lab training in modern methods. One 3-hour lab and one 1-hour recitation per week. (Fall only)

Coreqs: BIOL 380 or equivalent

BIOL 398 (s) Internship (1-3 credits, max 3)

Supervised internship in professional biological, non-university settings, integrating academic study with work experience; requires formal written plan of activities to be approved by academic advisor and department chair before engaging in the work; a final written report will be evaluated by on-campus faculty. Graded P/F.

Prereqs: Permission

BIOL 400 (s) Seminar (1-16 credits, max arranged)

May be used as a science elective after 1 required credit, up to a maximum of 4 credits. Graded P/F.

BIOL 401 Undergraduate Research (1-4 credits, max 8)

General Education: Senior Experience

Undergraduate research at the senior level. BIOL 401 cannot be used for major upper-division elective requirement credit in degrees offered by the Department of Biological Sciences.

Prereqs: Senior Standing and Permission of Instructor

BIOL 403 (s) Workshop (1-16 credits)

Credit arranged

BIOL 404 (s) Special Topics (1-16 credits)

Credit arranged

BIOL 407 Practicum in Biology Laboratory Teaching (2-6 credits, max 12)

General Education: Senior Experience

Organization, preparation, and teaching of lab experiments or demonstrations under faculty supervision.

Prereqs: Any four of the following courses: BIOL 114, BIOL 115, BIOL 213, BIOL 310, BIOL 312, or BIOL 314; and Permission

BIOL 408 Human Anatomy and Physiology Laboratory Pedagogy (2-4 credits, max 8)

General Education: Senior Experience

Developing presentations, learning assessments, and grading schemas for undergraduate anatomy and physiology courses. Includes specimen preparation, data collection, and analysis. Fall and Spring semester, variable credit. 2 credits per each 3-hour lab per week, one hour lab meeting per week.

Prereqs: Instructor Permission

BIOL 411 Senior Capstone (2 credits)

General Education: Senior Experience

Application of biological principles and information to the analysis of societal and philosophical issues. Typically Offered: Spring.

Prereqs: BIOL 310, BIOL 312, and BIOL 314 or BIOL 380, and Senior standing

BIOL 419 Microbial Physiology (3 credits)

This course examines how fundamental cellular phenomena like growth, stress response, or the coordination of metabolism arise. This is critical to understand how microbes overcome physiological challenges and survive in a stressful, changing world, thereby relating physiology to evolutionary pressures and ecological interactions. In particular, we explore quantitative concepts that synthesize understanding and seek to develop predictive models of cellular behavior. Typically Offered: Fall (Even Years).

Prereqs: BIOL 250

BIOL 421 Advanced Evolution/Population Dynamics (3 credits)

Scientific understanding of the processes of evolution, the history of life on earth, and application of evolutionary principles across fields in biology. (Spring only)

Prereqs: BIOL 310 or BIOL 314 or FOR 221 or REM 221 or WLF 220.

BIOL 425 (s) Experimental Field Ecology (3 credits)

General Education: Senior Experience

Intensive course on diverse aspects of field ecology to be held off-campus. Various global locations (i. e. Costa Rica, Oregon coast, Hawaii) are possible. The course will be scheduled during an 8-10 day period preceding/following the Spring Term (i. e. January or May). Will involve travel and lodging costs at student expense.

Prereqs: BIOL 114, BIOL 115, BIOL 213, BIOL 310, BIOL 312, and BIOL 314

BIOL 426 Systems Biology (3 credits)

Joint-listed with BIOL 526

Systems Biology will use quantitative approaches including theory and computation to understand the complex function that emerges from physiological systems. Topics will include transcriptional networks and their common motifs, robustness in chemotaxis and development, noise and variability, evolution of modularity, and optimality in metabolism. Two lectures per week. Cooperative: open to WSU degree-seeking students. (Fall only, alt/years).

Prereqs: BIOL 115, BIOL 115L and MATH 170 or permission of instructor

BIOL 428 Microscopic Anatomy (4 credits)

Basic principles of histology and advanced microscopic anatomy of vertebrate tissues and organs. (Fall, alt/even years)

Prereqs: BIOL 213 or BIOL 312

BIOL 432 Immunology (3 credits)

Theory and mechanisms of the cellular basis of immune response; antibody structure, function, and synthesis; cell-mediated immunity; complement; hypersensitivity; immunologic diseases; transplantation; tumor immunity. Extra oral and/or written assignments required for graduate credit. Typically Offered: Spring.

Prereqs: BIOL 300 or BIOL 380; and BIOL 312

BIOL 433 Pathogenic Microbiology (3 credits)

Epidemiology, host-parasite relationships, pathology, host response; treatment, prevention, and control of pathogenic microorganisms. Extra oral and/or written assignments required for graduate credit. Typically Offered: Fall.

Prereqs: BIOL 250

BIOL 444 Genomics (3 credits)

Structural, functional, and comparative genomics of animals, plants, fungi, and microbes. Case studies illustrating a genomic approach to questions of fundamental biological and societal relevance will be drawn from diverse fields such as human medicine, evolutionary biology, agriculture, and bioterrorism. (Spring, alt/years)

Prereqs: BIOL 114 and BIOL 310; or BIOL 250

BIOL 447 Virology (3 credits)

Joint-listed with BIOL 547

A survey of virology, with special emphasis on the molecular basis of replication, host-pathogen interactions and diseases associated with animal viruses. Extra oral and/or written assignments required for graduate credit. Recommended preparation: BIOL 250. (Fall, alt/years)

Prereqs: BIOL 312 or Permission

BIOL 454 Biochemistry II (3 credits)

Joint-listed with BIOL 554

Advanced protein structure and function, analyses of metabolism, nitrogen metabolism including amino acids and nucleotides, topics in secondary metabolism, and applications of biochemistry including biofuels and drug discovery. Extra oral and/or written assignments required for grad credit. Typically Offered: Spring.

Prereqs: CHEM 372; BIOL 380 or CHEM 302 or 306; or Permission

BIOL 456 Computer Skills for Biologists (3 credits)

Joint-listed with BIOL 549

Exploration and analysis of biological datasets such as those in molecular evolution, systematics, and genomics. Demonstrations, exercises, and student projects to teach Unix skills, git version control, and computer programming for data exploration and analysis. Graduate credit requires a project and presentation. Cooperative: open to WSU degree-seeking students. (Fall, alt/even years)

Prereqs: BIOL 310 and STAT 251 or STAT 301; or Permission

BIOL 460 Advanced Field Botany (3 credits)

Joint-listed with BIOL 560

Hands-on training in field botany as applied to evolutionary, ecological, and floristic studies; two-week field course in the Inland Northwest. Additional projects/assignments required for graduate credit. (Summer only)

Prereqs: Instructor Permission

BIOL 461 Neurobiology (3 credits)

Joint-listed with BIOL 565

Study of the nervous system, with an emphasis on mechanisms of neuronal signaling, the function of sensory and motor systems, and neural development. Recommended: PHYS 111, PHYS 112, and CHEM 275 or CHEM 277. Cooperative: open to WSU degree-seeking students. (Fall, Alt/years)

Prereqs: BIOL 213, BIOL 310, BIOL 312, GENE 314, BIOL 300, or BIOL 380

BIOL 474 Developmental Biology (3 credits)

Joint-listed with BIOL 573

Embryology of model organisms, mechanisms of developmental processes, reproductive biology, stem cells, growth, and tissue regeneration. Additional projects/assignments required for graduate credit. (Fall, Alt/years)

Prereqs: BIOL 310 or BIOL 312

BIOL 478 Animal Behavior (3 credits)

Evolution, causation, development, and function of behavior in vertebrates and invertebrates. (Spring only)

Prereqs: BIOL 114 and BIOL 115, BIOL 115L

BIOL 482 Protein Structure and Function (3 credits)

Joint-listed with BIOL 582

Detailed analysis of protein structure and function including enzyme activity, binding, folding and stability, and techniques for structure determination. Additional projects/assignments required for graduate credit. (Fall, alt/years) Prereq : BIOL 380

BIOL 483 Mammalogy (3 credits)

Evolution, systematics, distribution, and biology of mammals. Two lectures and one 3-hour lab per week; one field trip. (Fall only)

Prereqs: BIOL 114 and BIOL 115, BIOL 115L

BIOL 484 Invertebrate Zoology (4 credits, max 4)

Evolution, systematics, and ecology of invertebrate animals. Course organized around three main fundamental themes: (1) form and function; (2) development and life history; and (3) diversity and evolutionary history. Focus on non-insect invertebrates. Three lectures and one 3-hour lab a week. Field trips. Typically Offered: Spring (Odd Years).

Prereqs: BIOL 114

BIOL 485 Prokaryotic Molecular Biology (3 credits)

Joint-listed with BIOL 585

Current theory and experimental basis for prokaryotic DNA, RNA, and protein synthesis, gene regulation, and cell wall metabolism. Extra oral and/or written assignments required for graduate credit. (Spring only)

Prereqs: BIOL 250 and BIOL 380

BIOL 487 Cellular and Molecular Basis of Disease (3 credits)

Joint-listed with BIOL 587

Basic principles of cell biology explored in the context of human diseases. Emphasis on molecular mechanisms of cancer, Alzheimer's disease, and prion diseases. Extra oral and/or written assignments required for graduate credit. Typically Offered: Fall.

Prereqs: BIOL 380; and BIOL 310 or GENE 314

BIOL 489 Herpetology (4 credits)

Evolution, systematics, physiology, and ecology of reptiles and amphibians. Three lectures and one 3-hour lab per week; field trip. (Fall only)

Prereqs: BIOL 114 and BIOL 115, BIOL 115L

BIOL 499 (s) Directed Study (1-16 credits)

Credit arranged

BIOL 500 Master's Research and Thesis (1-16 credits)

Credit arranged

BIOL 501 (s) Seminar (1-16 credits)

Credit arranged

BIOL 502 (s) Directed Study (1-16 credits)

Credit arranged

BIOL 503 (s) Workshop (1-16 credits)

Credit arranged

BIOL 504 (s) Special Topics (1-16 credits)

Credit arranged

BIOL 505 Colloquium (1 credit)

Oral presentation required for credi. Graded P/F.

Prereqs: Permission

BIOL 508 Topics in Neuroscience (1 credit, max arranged)

Seminars and discussion of current topics in neuroscience.

Prereqs: Graduate standing

BIOL 521 Graduate Teaching Practicum (3 credits)

Organization, preparation, and teaching of lab experiments or demonstrations under faculty supervision. Graded P/F.

Prereqs: Graduate standing and Permission

BIOL 522 Molecular Evolution (3 credits)

Understanding evolutionary processes and patterns at the molecular level, techniques for using genetic and genomic data to understand evolutionary history of organisms, 3 lectures per week. Cooperative: open to WSU degree-seeking students. (Fall, alt/years)

Prereqs: Undergraduates require permission of instructor

BIOL 524 Research & Curriculum Progress (1 credit, max arranged)

Required of all graduate students one semester per year. The grade is based on preparation of an oral and written presentation of research goals and coursework for the completion of the degree. A letter grade is assigned by committee members at the time of the student's graduate committee meeting. Recommended preparation: Undergraduate degree in Microbiology, Biochemistry, or related topic.

Prereqs: Permission

BIOL 526 Systems Biology (3 credits)

Joint-listed with BIOL 426

Systems Biology will use quantitative approaches including theory and computation to understand the complex function that emerges from physiological systems. Topics will include transcriptional networks and their common motifs, robustness in chemotaxis and development, noise and variability, evolution of modularity, and optimality in metabolism. Two lectures per week. Cooperative: open to WSU degree-seeking students. (Fall only, alt/years).

Prereqs: BIOL 115, BIOL 115L and MATH 170 or permission of instructor

BIOL 536 Phylogenetics Reading Group (1 credit, max arranged)

Review recent articles in phylogenetics and systematics journals. Students choose, critically review, and discuss the articles to develop critical-thinking skills and confidence in their knowledge of the literature. Graded P/F. Cooperative: open to WSU degree-seeking students.

BIOL 545 Phylogenetics (3 credits)

The inference of evolutionary trees (phylogeny) and the processes that generate biodiversity from analyses of morphological, molecular, and behavioral data; uses of phylogenies in testing evolutionary and other hypotheses at both inter and intraspecific levels. Two hours of lecture and one 3-hour lab per week. Cooperative: open to WSU degree-seeking students. (Spring, Alt/years)

Prereqs: PLSC 205 or BIOL 213 and BIOL 310

BIOL 547 Virology (3 credits)

Joint-listed with BIOL 447

A survey of virology, with special emphasis on the molecular basis of replication, host-pathogen interactions, and diseases associated with animal viruses. Extra oral and/or written assignments required for graduate credit. Recommended preparation: BIOL 250. (Fall, alt/years)

Prereqs: BIOL 312 or Permission

BIOL 549 Computer Skills for Biologists (3 credits)

Joint-listed with BIOL 456

Exploration and analysis of biological datasets such as those in molecular evolution, systematics, and genomics. Demonstrations, exercises, and student projects to teach Unix skills, git version control, and computer programming for data exploration and analysis. Graduate credit requires a project and presentation. Cooperative: open to WSU degree-seeking students. (Fall, alt/even years)

Prereqs: BIOL 310 and STAT 251 or STAT 301; or Permission

BIOL 551 Seminar on Reproductive Biology (1 credit, max 5)

Current topics in reproductive biology. Cooperative: open to WSU degree-seeking students. (Spring only)

Prereqs: Graduate standing

BIOL 552 Professional Development for Biologists (3 credits)

Oral and written presentation skills for communicating scientific information, including grant writing and data presentation for manuscripts and seminars.

Prereqs: Graduate standing

BIOL 553 Ethical Issues in Biological Research (1 credit)

Practical ethical issues for biologists.

Prereqs: Graduate standing

BIOL 554 Biochemistry II (3 credits)

Joint-listed with BIOL 454

Advanced protein structure and function, analyses of metabolism, nitrogen metabolism including amino acids and nucleotides, topics in secondary metabolism, and applications of biochemistry including biofuels and drug discovery. Extra oral and/or written assignments required for grad credit. Typically Offered: Spring.

Prereqs: CHEM 372; BIOL 380 or CHEM 302 or 306; or Permission

BIOL 560 Advanced Field Botany (3 credits)

Joint-listed with BIOL 460

Hands-on training in field botany as applied to evolutionary, ecological, and floristic studies; two-week field course in the Inland Northwest. Additional projects/assignments required for graduate credit. (Summer only)

Prereqs: Instructor Permission

BIOL 563 Mathematical Genetics (3 credits)

Cross-listed with MATH 563

Investigation of aspects of evolutionary biology with an emphasis on stochastic models and statistical methods; topics include: diffusion methods in molecular evolution, gene genealogies and the coalescent, inferring coalescent times from DNA sequences, population subdivision and F statistics, likelihood methods for phylogenetic inference, statistical hypothesis testing, the parametric bootstrap. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 160 or MATH 170 and STAT 251 or STAT 301

BIOL 565 Neurobiology (3 credits)

Joint-listed with BIOL 461

Study of the nervous system, with an emphasis on mechanisms of neuronal signaling, the function of sensory and motor systems, and neural development. Recommended: PHYS 111, PHYS 112, and CHEM 275 or CHEM 277. Cooperative: open to WSU degree-seeking students. (Fall, Alt/years)

Prereqs: BIOL 213, BIOL 310, BIOL 312, GENE 314, BIOL 300, or BIOL 380

BIOL 573 Developmental Biology (3 credits)

Joint-listed with BIOL 474

Embryology of model organisms, mechanisms of developmental processes, reproductive biology, stem cells, growth, and tissue regeneration. Additional projects/assignments required for graduate credit. (Fall, Alt/years)

Prereqs: BIOL 310 or BIOL 312

BIOL 582 Protein Structure and Function (3 credits)

Joint-listed with BIOL 482

Detailed analysis of protein structure and function including enzyme activity, binding, folding and stability, and techniques for structure determination. Additional projects/assignments required for graduate credit. (Fall, alt/years) Prereq : BIOL 380

BIOL 585 Prokaryotic Molecular Biology (3 credits)

Joint-listed with BIOL 485

Current theory and experimental basis for prokaryotic DNA, RNA, and protein synthesis, gene regulation and cell wall metabolism. Extra oral and/or written assignments required for graduate credit. (Spring only)

Prereqs: BIOL 250 and BIOL 380

BIOL 587 Cellular and Molecular Basis of Disease (3 credits)

Joint-listed with BIOL 487

Basic principles of cell biology explored in the context of human diseases. Emphasis on molecular mechanisms of cancer, Alzheimer's disease, and prion diseases. Extra oral and/or written assignments required for graduate credit. Typically Offered: Fall.

Prereqs: BIOL 380; and BIOL 310 or GENE 314

BIOL 598 (s) Internship (1-16 credits)

Credit arranged

BIOL 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

BIOL 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Bioregional Plan & Comm Design (BIOP)

BIOP 404 (s) Special Topics (1-16 credits)

Credit arranged

BIOP 423 Planning Sustainable Places (3 credits)

Cross-listed with ENVS 423

Joint-listed with BIOP 523, ENVS 523

This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit. Typically Offered: Varies.

BIOP 500 Master's Research & Thesis (1-16 credits)

Credit arranged

BIOP 501 (s) Seminar (1-16 credits)

Credit arranged

BIOP 502 (s) Directed Study (1-16 credits)

Credit arranged

BIOP 503 (s) Workshop (1-16 credits)

Credit arranged

BIOP 504 (s) Special Topics (1-16 credits)

Credit arranged

BIOP 520 Introduction to Bioregional Planning (3 credits)

Cross-listed with ENVS 520

Joint-listed with ENVS 420

This class introduces students to bioregional planning concepts and shows the difference between "traditional" planning and bioregional planning and explores the relevance of "traditional" planning and bioregional planning for communities in the American West. Additional work required for graduate credit. Typically Offered: Varies.

BIOP 521 Local and Regional Comprehensive Planning (3 credits)

Provides an overview of the processes and methods for preparing comprehensive plans for local and county governments in the context of federal and state lands and regional growth management. Integrates land-use with economic development, housing, historic preservation, agricultural viability. Includes lectures by practitioners and interdisciplinary faculty, and a service-learning project. (Fall only)

BIOP 522 Bioregional Planning Methods (3 credits)

This is an overview course of the methods used in making evidence based decisions in regional planning. This course covers the most common ways that planners collect and analyze data. The course specifically focuses on the challenges of the collection, analysis and evaluation of data within the setting of non-metropolitan areas and rural communities.

BIOP 523 Planning Sustainable Places (3 credits)

Cross-listed with ENVS 523

Joint-listed with BIOP 423, ENVS 423

This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit. Typically Offered: Varies.

BIOP 530 Planning Theory and Process (3 credits)

Cross-listed with ENVS 530

Joint-listed with ENVS 430

Seminar provides a historical and theoretical basis to address the application of knowledge to public and political decisions and the ethics of professional practice within public and non-governmental settings. Readings, discussions, and essays focus on underlying traditions and assumptions, cultural contexts, social justice and "planner" roles. Additional work required for graduate credit. Typically Offered: Varies.

BIOP 560 Bioregional Planning Studio I (4 credits)

Students will work on one or more projects that target the needs of an Idaho community or regional agency. The projects will involve the application of various tools including GIS, comprehensive planning, physical design, economic development, transportation systems or other relevant methods in the creation of products or proposals. In this course, students will learn a variety of skills related to facilitation, negotiation, community politics, conflict management and assessment tools such as social impact or environmental impact assessments. (Spring only)

BIOP 561 Bioregional Planning Studio II (4 credits)

This course is intended to allow students to integrate a number of skill sets by choosing a project that builds on their program specialization. Students work with faculty advisors to develop and complete final projects. Students will also have the opportunity to interact with first year students in BIOP 560 at regular intervals throughout the semester to discuss common readings, provide mutual assistance on projects and peer-to-peer evaluation of completed work. (Spring only)

Prereqs: BIOP 560

BIOP 598 (s) Internship (1-16 credits)

Credit arranged

BIOP 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

Business (BUS)

BUS 190 Integrated Business and Value Creation (3 credits)

Explores the environment of business and the management of business systems to understand how an organization turns opportunity into value. This course uses an integrated, cross-disciplinary perspective including working in teams. Includes international and ethical issues. May involve evening exams.

BUS 200 (s) Seminar (1-16 credits)

Credit arranged

BUS 204 (s) Special Topics (1-16 credits)

Credit arranged

BUS 298 (s) Internship (1-3 credits, max 6)

Student shall complete internship contract in consultation with area internship coordinator prior to enrolling for internship credit. Graded P/F.

Prereqs: Major in the Department of Business and Permission

BUS 299 (s) Directed Study (1-16 credits)

Credit arranged

BUS 303 Business Negotiations (3 credits)

Business negotiations is an applied course that develops bargaining skills required to obtain maximum value and excellent outcomes. Topics include traditional bargaining (distributive negotiation), interest-based negotiation (integrative negotiation), persuasion, developing a system for preparing for professional negotiations, applications to compensation, selling, and sales, negotiations in dyadic, group, and online situations. Typically Offered: Fall.

BUS 354 Business Analytics (3 credits)

Introduction to business analytics including modeling and sensitivity analysis. Topics include psychology of problem solving, optimization, decision theory, simulation, regression, and related issues. May involve evening exams. Typically Offered: Fall, Summer, Spring.

Prereqs: STAT 251 or STAT 301; and MATH 143 or MATH 160 or MATH 170 or MATH 175 or MATH 275; ACCT 201; and ECON 201 and ECON 202, or ECON 272

BUS 398 (s) Internship (1-3 credits, max 6)

Student shall complete internship contract in consultation with area internship coordinator prior to enrolling for internship credit. Graded P/F.

Prereqs: Major in the Department of Business and Permission

BUS 400 (s) Seminar (1-16 credits)

Credit arranged

BUS 404 (s) Special Topics (1-16 credits)

Credit arranged

BUS 429 Vandal Solutions (1-3 credits, max 10)

In this class students learn business by doing business. Students will run a business that provides, for a fee, market research products to clients (both external and internal to the UI). Students will apply concepts learned in the business curriculum such as the selling process, the market research process, integrated marketing communications, marketing and business plans, human resource management, financial management, and cross-functional collaboration. Members of Vandal Solutions decide how profits generated are dispersed with the general guideline being that funds should be used to support student activities such as club activities, field trips, career planning, and scholarships. May involve field trips. Recommended Preparation: Junior standing.

Prereqs: Permission

BUS 490 Strategic Management (3 credits)

General Education: Senior Experience

Capstone, integrative senior experience course focusing on the formulation and implementation of competitive strategy in both domestic and international contexts. Emphasizes approaches that executives take to provide ethical and strategic leadership to an organization as well as approaches used to achieve alignment of strategy with action across the various functional areas of the business. Application of strategy concepts in practice will be stressed. May involve evening exams.

Prereqs: MHR 310, FIN 301, MKTG 321, MIS 350, OM 370; and ENGL 207 or ENGL 208 or ENGL 313 or ENGL 317 or PHIL 201; and senior standing

BUS 498 (s) Internship (1-16 credits)

Credit arranged

BUS 499 (s) Directed Study (1-16 credits)

Credit arranged

BUS 502 (s) Directed Study (1-16 credits)

Credit arranged

BUS 504 (s) Special Topics (1-16 credits)

Credit arranged

BUS 505 (s) Workshop (1-16 credits)

Credit arranged

BUS 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Business Law (BLAW)

BLAW 265 Legal Environment of Business (3 credits)

Law and its relationship to society; legal framework of business enterprises; court organization and operation; private property and contracts as basic concepts in a free enterprise system. May involve evening exams.

BLAW 404 (s) Special Topics (1-16 credits)

Credit arranged

BLAW 420 Commercial Law (3 credits)

Uniform commercial code and law of agency, partnerships, and corporations. May include evening exams.

Prereqs: BLAW 265

BLAW 425 Law of Business Entities (3 credits)

Business law related to corporations, partnerships, and limited liability companies with emphasis on applying the law to various business entities and how it might be used in business and personal planning. The case method is used. May include evening exams. (Fall only)

BLAW 504 (s) Special Topics (1-16 credits)

Credit arranged

Career and Technical Education (CTE)

CTE 200 (s) Seminar (1-16 credits)

Credit arranged

CTE 203 (s) Workshop (1-16 credits)

Credit arranged

CTE 204 (s) Special Topics (1-16 credits)

Credit arranged

CTE 298 (s) Internship (1-16 credits)

Credit arranged

CTE 299 (s) Directed Study (1-16 credits)

Credit arranged

CTE 351 Principles and Philosophy of Career and Technical Education (3 credits)

Joint-listed with CTE 551

Overview and interpretation of history, aims, and purposes of public education and professional-technical education; issues and programs comprising professional-technical education in Idaho and in the nation. Additional projects/assignments required for graduate credit.

CTE 353 Manufacturing Systems (3 credits)

In-depth examination and implementation of manufacturing theory and processes including research and development, product planning and controlling. Topics, such as Lean Manufacturing, Kanban, relating to manufacturing facilities and management of manufacturing processes will be discussed, studied and implemented in the manufacture of a designed product in quantity.

CTE 370 Transportation & Engineering Technologies (3 credits)

Students will explore various forms of renewable energy and transportation systems. They will also work in teams to propose solutions to power, energy and transportation issues. Students will research, design, build and evaluate their potential solutions in a hands-on laboratory environment. Recommended Preparation: MATH 143 and PHYS 111.

CTE 398 (s) Internship (1-16 credits)

Credit arranged

CTE 400 (s) Seminar (1-16 credits)

Credit arranged

CTE 403 (s) Workshop (1-16 credits)

Credit arranged Graded P/F.

Prereqs: Permission

CTE 404 (s) Special Topics (1-16 credits)

Credit arranged

CTE 405 (s) Professional Development (1-16 credits, max arranged)

Joint-listed with CTE 505

Credit arranged. Credits earned in this course will not be accepted toward graduate degree programs. Professional development and enrichment. Additional projects/assignments required for graduate credit.

CTE 410 Technology & Society (3 credits)

In-depth examination and implementation of the relationship between technology and social change; previous course work in technology is not essential.

CTE 413 Retail Merchandising for Marketing Education (3 credits)

Designed for marketing teacher preparation. Contemporary information and activities that address retail merchandising, including standards and curriculum resources for secondary and two-year technical college courses. Curriculum standards, educational resources, careers, the role of retail, and the operation of a retail business that includes market analysis, store layout, and merchandising. Recommended Preparation: MKTG 321.

CTE 415 Productivity Software in Business Education (3 credits)

Advanced computer applications course designed primarily for business teacher education students; includes extensive hands-on experience using word processing, spreadsheet, and database programs used in both industry and business education programs; addresses methodology, curriculum development, and classroom management techniques.

CTE 416 Website Design and Development (3 credits)

Basics of html, advanced use of web development applications for purposes of creating effective websites that incorporate accepted design principles, taught in the context of Professional-Technical Education.

CTE 418 Teaching Economics and Personal Finance (3 credits)

In-depth examination and implementation of methods and materials for teaching economics and personal finance.

Prereqs: ECON 201 or Equivalent

CTE 419 Database Applications and Information Management (3 credits)

Teaching and training strategies for database applications. Includes database management principles and methods of information retrieval, processing, storage and distribution. Advanced project required for graduate credit.

CTE 420 Assessment in Contextual Learning Environments (3 credits)

Methods of assessing in contextual and hands on learning environments. Includes authentic assessment of project based learning.

CTE 426 Occupational Analysis and Curriculum Development (3 credits)

Instructional design systems and curriculum development as a systematic method of designing, carrying out, and evaluating the total process of teaching and learning; based on research in human learning and communication, employing a combination of human and non-human resources to bring about effective instruction. Focus on secondary and post-secondary professional/technical education.

CTE 430 Leadership and Student Organizations (2 credits)

Development of leadership skills; instruction in planning, implementation and supervision of professional-technical student organizations; and participation in regional leadership conferences.

CTE 431 Supervising CTE Career and Technical Student Organizations (1-3 credits, max 3)

Supervising CTE CTSOs involves active participation in career and technical student organization (CTSOs). Students assist in the administration and supervision of secondary regional and/or state CTSO conferences, and involve themselves with content area post-secondary CTSO competitive events program. Students are responsible for arranging and financing travel to appropriate CTSO events.

CTE 447 Diverse Populations and Individual Differences (2-3 credits)

Examines the impact of individual differences on teaching and learning.

CTE 460 Desktop Publishing (3 credits)

Advanced desktop publication techniques, concepts, and applications through use of computer technology; planning, layout, and design of publications are highlighted. Recommended Preparation: CTE 415.

CTE 462 Communication Technology (3 credits)

Investigation and laboratory activities associated with a variety of communication technologies, including interpersonal, human to machine and machine to machine, through contemporary devices and materials. Recommended Preparation: CTE 415.

CTE 464 Career Guidance and Transitioning to Work (3 credits)

Designed for career development counselors and facilitators; establishment of the three pillars of career guidance and how to implement the steps for developing a comprehensive individualized career plan.

CTE 470 Technical Competence (1-32 credits, max 32)

Technical competence is gained from occupational credentials or passing of competency exams related to the bachelor of science degree in PTE education or technology. Grades for successful completion of CTE 470 will be transcribed as P (pass) normally during the student's last semester and completion of all degree requirements.

CTE 472 Teaching and Learning in Organizations (3 credits)

Students examine research-based approaches to facilitate learning outcomes for occupational educators in post-secondary, secondary and private sector contexts; Instructional strategies and materials will be considered and developed to facilitate learning in technical skills, related applied academics, and workplace readiness knowledge and dispositions.

CTE 484 (s) Internship in Career and Technical Education Teaching (3-14 credits, max 28)

Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings.

Prereqs: Admission to teacher education program

Coreqs: EDCI 401

CTE 492 Business and Marketing Education Methods (3 credits)

Teaching pedagogy, instructional materials and student evaluation strategies in Business and Marketing Education.

Prereqs: Permission

CTE 494 Senior Project (3 credits)

In the last year of study, students select an individual design project related to their area of specialization within technology education. Some students may have the option of joining a Senior Design Team in the College of Engineering. Project must be approved by instructor.

CTE 495 Administrative Technology Management and Procedures (3 credits)

Administrative office procedures and management techniques, advanced business document preparation, intermediate/advanced keyboarding skills, and ARMA filing rules. Recommended Preparation: CTE 415 and keyboarding proficiency.

CTE 498 (s) Internship (1-16 credits)

Credit arranged

CTE 499 (s) Directed Study (1-16 credits)

Credit arranged

CTE 500 Master's Res & Thesis (1-16 credits)

Credit arranged

CTE 501 (s) Seminar (1-16 credits)

Credit arranged

CTE 502 (s) Directed Study (1-16 credits)

Credit arranged

CTE 503 (s) Workshop (1-16 credits)

Credit arranged

CTE 504 (s) Special Topics (1-16 credits)

Credit arranged

CTE 505 (s) Professional Development (1-16 credits, max arranged)

Joint-listed with CTE 405

Credit arranged. Credits earned in this course will not be accepted toward graduate degree programs. Professional development and enrichment. Additional projects/assignments required for graduate credit.

CTE 519 Database Applications and Information Management (3 credits)

Joint-listed with CTE 419

Teaching and training strategies for database applications. Includes database management principles and methods of information retrieval, processing, storage and distribution. Advanced project required for graduate credit.

CTE 544 Idaho Leadership Institute (1-12 credits, max 12)

Institute for the preparation of the next generation of Idaho's leaders in professional-technical education.

Prereqs: Accepted into the Idaho Leadership Institute.

CTE 551 Principles and Philosophy of Career and Technical Education (3 credits)

Joint-listed with CTE 351

Overview and interpretation of history, aims, and purposes of public education and professional-technical education; issues and programs comprising professional-technical education in Idaho and in the nation. Additional projects/assignments required for graduate credit.

CTE 597 (s) Practicum (1-16 credits)

Credit arranged. Application of theories and techniques; supervised field experiences in selected settings.

CTE 598 (s) Internship (1-16 credits)

Credit arranged. Supervised experience in teacher education, administration, supervision, or ancillary services in professional-technical education.

CTE 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

CTE 600 Doctoral Research & Dissertation (1-45 credits)

Credit arranged

Chemical Engineering (CHE)

CHE 110 Introduction to Chemical Engineering (1 credit)

Introduction to chemical engineering career opportunities and process principles including problem solving and documentation skills. Graded P/F.

CHE 123 Computations in Chemical Engineering (2 credits)

Methods of analyzing and solving problems in chemical engineering using personal computers; spreadsheet applications, data handling, data fitting, material balances, experimental measurements, separations, and equation solving. Coordinated lec-lab periods.

Prereqs: Minimum 520 SAT Math or minimum 22 ACT Math or 49 COMPASS Algebra or MATH 143 or MATH 170; or Permission.

Coreqs: MATH 143, MATH 170, or higher

CHE 204 (s) Special Topics (1-16 credits)

Credit arranged

CHE 210 Integrated Chemical Engineering Fundamentals (1 credit)

Recitation support for fundamental STEM courses and process principles including problem solving and documentation skills. Twice a week, 2 hour recitation sessions. Graded P/F.

Prereqs: CHE 110 and CHE 123

CHE 220 Programming for Chemical Engineers (3 credits)

Algorithm development, principles of structured programming techniques, coding of numerical and graphical techniques for solutions of engineering systems.

Prereqs: MATH 170, CHEM 111, and CHE 123; or Instructor Permission

CHE 223 Material and Energy Balances (3 credits)

Conservation of mass and energy calculations in chemical process systems.

Prereqs: CHEM 112, CHEM 112L, MATH 175

CHE 299 (s) Directed Study (1-16 credits)

Credit arranged

CHE 307 Group Mentoring (1 credit, max 3)

Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Students must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).

Prereqs: Permission

CHE 326 Chemical Engineering Thermodynamics (3 credits)

Behavior and property estimation for nonideal fluids; phase and reaction equilibria; applications to industrial chemical processes.

Prereqs: CHE 223, ENGR 320 and ENGR 335, MATH 310

Coreqs: CHEM 305

CHE 330 Separation Processes I (3 credits)

Equilibrium stagewise operations, including distillation, extraction, absorption.

Prereqs: CHE 326, CHEM 305

CHE 340 Transport and Rate Processes I (4 credits)

Cross-listed with MSE 340

Transport phenomena involving momentum, energy, and mass with applications to process equipment design. Coordinated lec-lab periods.

Prereqs: ENGR 335, MATH 310, and CHE 223 or MSE 201

CHE 341 Transport and Rate Processes II (4 credits)

Transport phenomena involving momentum, energy, and mass with applications to process equipment design. Coordinated lecture-lab periods.

Prereqs: CHE 340

CHE 393 Chemical Engineering Projects (1-3 credits, max 9)

Problems of a research or exploratory nature.

Prereqs: Permission of department

CHE 398 (s) Engineering Cooperative Internship (3 credits)

Supervised internship in professional engineering settings, integrating academic study with work experience; requires written report; positions are assigned according to student's ability and interest. Graded P/F.

Prereqs: Permission

CHE 400 (s) Seminar (1-16 credits)

Credit arranged

CHE 404 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: Permission

CHE 423 Reactor Kinetics and Design (3 credits)

Chemical reaction equilibria, rates, and kinetics; design of chemical and catalytic reactors.

Prereqs: CHE 223, MATH 310, CHEM 305

CHE 433 Chemical Engineering Lab I (1 credit)

Senior lab experiments in chemical engineering.

Prereqs: CHE 330, CHE 341, CHE 423

CHE 434 Chemical Engineering Lab II (1 credit)

Senior lab experiments in chemical engineering.

Prereqs: CHE 330, CHE 341, CHE 423

CHE 444 Process Analysis and Control (3 credits)

Process modeling, dynamics, and analysis. Coordinated lecture-lab periods. Recommended Preparation: CHE 223, MATH 310.

CHE 445 Digital Process Control (3 credits)

Cross-listed with ECE 477

Dynamic simulation of industrial processes and design of digital control systems. Coordinated lecture-lab periods. Recommended Preparation: CHE 444 (Recommended Preparation for EE majors: ECE 350).

CHE 451 Environmental Management and Design (1-16 credits, max arranged)

Credit arranged. Waste management application projects; projects require original design, working model, and report. May involve week-long trip to national competition. One lecture and 3 hours of lab per week; weekly team status report meetings plus weekly task reviews with advisor.

Prereqs: Permission (by invitation only)

CHE 452 Environmental Management and Design (1-16 credits, max arranged)

General Education: Senior Experience

Credit arranged. Waste management application projects; projects require original design, working model, and report. May involve week-long trip to national competition. One lecture and 3 hours of lab per week; weekly team status report meetings plus weekly task reviews with advisor.

Prereqs: Permission (by invitation only)

CHE 453 Process Analysis & Design I (3 credits)

Cross-listed with MSE 453

Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. CHE 453 and CHE 454/MSE 453 and MSE 454 are to be taken in sequence. (Fall only)

Prereqs: CHE 330, CHE 341, and CHE 423; or MSE 201, MSE 308, MSE 313, MSE 340, and MSE 412

CHE 454 Process Analysis and Design II (3 credits)

General Education: Senior Experience

Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. CHE 453 and CHE 454 are to be taken in sequence. (Spring only)

CHE 455 Surfaces and Colloids (3 credits)

Chemical and physical phenomena near material interfaces and behaviors of colloidal particles in dispersing media.

Prereqs: CHE 326 or CHEM 305 or permission

CHE 460 Biochemical Engineering (3 credits)

Joint-listed with CHE 560

Application of chemical engineering to biological systems including fermentation processes, biochemical reactor design, and biological separation processes. Additional projects/assignments required for graduate credit.

CHE 491 Senior Seminar (1 credit)

General Education: Senior Experience

Professional aspects of the field, employment opportunities, and preparation of occupational inventories. Graded P/F.

Prereqs: Senior standing.

CHE 498 (s) Internship (1-16 credits)

Credit arranged

CHE 499 (s) Directed Study (1-16 credits)

Credit arranged

CHE 500 Master's Research and Thesis (1-16 credits)

Credit arranged

CHE 501 (s) Seminar (0-1 credits, max 2)

Cross-listed with BE 501

Graded P/F.

Prereqs: Permission

CHE 502 (s) Directed Study (1-16 credits)

Credit arranged

CHE 504 (s) Special Topics (1-16 credits)

Credit arranged

CHE 505 (s) Professional Development (1-16 credits)

Credit arranged

CHE 515 Transport Phenomena (3 credits)

Advanced treatment of momentum, energy, and mass transport processes; solution techniques. Cooperative: open to WSU degree-seeking students.

Prereqs: B. S. Ch. E. and Equivalent of CHE 340, CHE 341 or Permission

CHE 517 Chemicals and Materials Analysis (3 credits)

Theory and experiments in photon/particle interactions, including x-ray diffraction, electron spectroscopy and microscopy techniques for chemical and physical property analyses applied to chemical, materials and nuclear engineering.

Prereqs: Graduate Standing or Permission

CHE 527 Thermodynamics (3 credits)

Thermodynamic laws for design and optimization of thermodynamic systems, equations of state, properties of ideal and real fluids and fluid mixtures, stability, phase equilibrium, chemical equilibrium, applications of thermodynamic principles. Cooperative: open to WSU degree-seeking students.

Prereqs: B. S. Ch. E. and Equivalent of CHE 326 or Permission

CHE 529 Chemical Engineering Kinetics (3 credits)

Interpretation of kinetic data and design of reactors for heterogeneous chemical reaction systems; heterogeneous catalysis, gas-solid reactions, gas-liquid reactions; packed bed reactors, fluidized bed reactors. Cooperative: open to WSU degree-seeking students.

Prereqs: B. S. Ch. E. and Equivalent of CHE 423 or Permission

CHE 536 Electrochemical Engineering (3 credits)

Cross-listed with NE 536

Application of chemical engineering principles to electrochemical systems; thermodynamics, kinetics, and mass transport in electrochemical systems; electrochemical process design. Recommended preparation: graduate engineering standing.

CHE 541 Chemical Engineering Analysis I (3 credits)

Mathematical analysis of chemical engineering operations and processes; mathematical modeling and computer applications. Cooperative: open to WSU degree-seeking students.

Prereqs: B. S. Ch. E. and Equivalent of CHE 444 or Permission

CHE 560 Biochemical Engineering (3 credits)

Joint-listed with CHE 460

Application of chemical engineering to biological systems including fermentation processes, biochemical reactor design, and biological separation processes. Additional projects/assignments required for graduate credit.

CHE 582 Spent Nuclear Fuel Management and Disposition (3 credits)

Cross-listed with NE 582

The management of nuclear fuel after removal from a nuclear reactor; storage options, recycle and recovery of uranium and other radionuclides, geological repositories and related topics.

Prereqs: Permission

CHE 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

CHE 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Chemistry (CHEM)

Vertically-related courses in this subject field are:

- CHEM 111 – CHEM 112 – CHEM 253
- CHEM 101 – CHEM 275

CHEM 101 Introduction to Chemistry (3 credits)

General Education: Natural/Integrated Science

Full credit may be earned in only one of the following: CHEM 101 or CHEM 111. General treatment of the fundamentals of chemistry. Does not satisfy the prerequisite for CHEM 112. Typically Offered: Fall and Spring.

CHEM 101L Introduction to Chemistry Laboratory (1 credit)

General Education: Natural/Integrated Science

This is the companion laboratory course to CHEM 101 and provides an introduction to Chemistry lab practices. It does not satisfy the lab requirement for CHEM 111 or CHEM 112. One 3-hour lab per week.

Prereqs or

Coreqs: CHEM 101

CHEM 111 General Chemistry I (3 credits)

General Education: Natural/Integrated Science

Full credit may be earned in only one of the following: CHEM 101, or CHEM 111. Note that grades in CHEM 111 will supersede any grades earned in CHEM 101. Intensive treatment of principles and applications of chemistry. Recommended Preparation: A grade of 'B' or better in a high school chemistry course. Typically Offered: Fall and Spring.

Prereqs: Minimum 580 SAT Math or minimum 25 ACT Math, or minimum 46 ALEKS; or a grade of 'C' or better in CHEM 101, MATH 143, MATH 160, or MATH 170; or Permission

CHEM 111L General Chemistry I Laboratory (1 credit)

General Education: Natural/Integrated Science

This is the companion laboratory course to CHEM 111 and provides an intensive treatment of Chemistry lab practices. One 3-hour lab per week.

Prereqs or

Coreqs: CHEM 111

CHEM 112 General Chemistry II (4 credits)

General Education: Natural/Integrated Science

Continuation of CHEM 111. Some work in inorganic chemistry, kinetics, equilibrium, liquids, solids, acid-base, electrochemistry, nuclear chemistry, thermodynamics, and qualitative inorganic analysis. Typically Offered: Fall and Spring.

Prereqs: CHEM 111 and CHEM 111L or Permission

CHEM 112L General Chemistry II Laboratory (1 credit)

This is the companion laboratory course to CHEM 112 and teaches Chemistry lab practices in inorganic chemistry, kinetics, equilibrium, acid-base, electrochemistry, thermodynamics, and qualitative analysis. One 3-hour lab and one recitation hour per week. Typically Offered: Fall and Spring.

Prereqs: CHEM 111L

Prereqs or Coreqs: CHEM 112

CHEM 121 Glassblowing (1 credit)

Techniques used in constructing scientific apparatus from glass. Graded P/F. One 3-hour lab per week.

Prereqs: Permission of department

CHEM 200 (s) Seminar (1-16 credits)

Credit arranged

CHEM 204 (s) Special Topics (1-16 credits)

Credit arranged

CHEM 253 Quantitative Analysis (3 credits)

Fundamental principles and techniques of chemical analysis; intro to sampling, standardization, data evaluation, gravimetric/volumetric methods, and instrumental techniques. (Fall only)

Prereqs: CHEM 112, CHEM 112L**CHEM 254 Quantitative Analysis: Lab (2 credits)**

Laboratory portion of Quantitative Analysis (CHEM 253).

Prereqs or Coreqs: CHEM 253**CHEM 275 Carbon Compounds (3 credits)**

Aspects of organic chemistry important to students in the life sciences.

Prereqs: CHEM 101 and CHEM 101L or CHEM 111 and CHEM 111L or Permission**CHEM 276 Carbon Compounds Lab (1 credit)**

Lab to accompany CHEM 275; for students who need only 1 credit of lab. One 3-hour lab per week.

Prereqs or Coreqs: CHEM 275 or CHEM 277**CHEM 277 Organic Chemistry I (3 credits)**

Principles and theories of organic chemistry; properties, preparation, and reactions of organic compounds.

Prereqs: CHEM 112, CHEM 112L**CHEM 278 Organic Chemistry I: Lab (1 credit)**

One 3-hour lab per week.

Prereqs or Coreqs: CHEM 277**CHEM 299 (s) Directed Study (1-16 credits)**

Credit arranged

CHEM 302 Principles of Physical Chemistry (3 credits)

Emphasis on topics important to biological and agricultural science. (Fall only)

Prereqs: CHEM 112, CHEM 112L, MATH 160 or MATH 170 or MATH 175, and PHYS 111, PHYS 111L, or Permission**CHEM 303 Principles of Physical Chemistry Lab (1 credit)**

Lab to accompany CHEM 302. One 3-hour lab per week. (Fall only)

Prereqs or Coreqs: CHEM 302**CHEM 305 Physical Chemistry (3 credits)**

Kinetic theory, thermodynamics (work, heat and energy); state functions, thermochemistry, the second law of thermodynamics; free energy and mixtures; electrolyte solutions and phase equilibrium; chemical and electrochemical equilibrium. (Fall only)

Prereqs: CHEM 112 and CHEM 112L, and MATH 275**Coreqs:** PHYS 212 or PHYS 213**CHEM 306 Physical Chemistry II (3 credits)**

Kinetic theory, atomic and molecular structure, quantum mechanics, statistical mechanics. (Spring only)

Prereqs: CHEM 305**CHEM 307 Physical Chemistry Lab (1 credit)**

Lab to accompany CHEM 305, CHEM 306. One 3-hour lab per week. (Fall only)

Prereqs or Coreqs: CHEM 305**CHEM 308 Physical Chemistry Lab (1 credit)**

Lab to accompany CHEM 305, CHEM 306. One 3-hour lab per week. (Spring only)

Prereqs or Coreqs: CHEM 306**CHEM 372 Organic Chemistry II (3 credits)**

Continuation of CHEM 277. (Spring only)

Prereqs: CHEM 277**CHEM 374 Organic Chemistry II: Lab (1 credit)**

Lab to accompany CHEM 372; includes synthesis, structure determination, and mechanisms. One 3-hour lab per week. (Spring only)

Prereqs: CHEM 278**Prereqs or Coreqs:** CHEM 372**CHEM 400 (s) Seminar (1-16 credits)**

Credit arranged

CHEM 404 (s) Special Topics (1-16 credits)

Credit arranged

CHEM 409 Proseminar (1 credit)

General Education: Senior Experience

Current publications in chemistry and chemical engineering with reports on typical scientific papers. Preparation of application materials for graduate work and/or careers in chemistry.

Prereqs: CHEM 372 and junior standing**CHEM 418 Environmental Chemistry (3 credits)**

Joint-listed with CHEM 518

Chemistry of atmosphere, soil, and water; pollution monitoring and remediation; treatment of waste in the environment. Additional projects/assignments required for graduate credit. (Spring only)

Prereqs: CHEM 253, CHEM 254, and CHEM 275 or CHEM 277, or Permission**CHEM 436 Electronics for Scientists (2-4 credits, max 4)**

Joint-listed with CHEM 535

Theory and application of analog and digital electronics used in scientific instrumentation. Registration for CHEM 535 requires completion of an additional term paper or other assignment (Fall, alt/years).

Prereqs: Permission**CHEM 454 Instrumental Analysis (3-4 credits)**

For students in chemistry and allied fields. Techniques in operating new and specialized instruments for qualitative and quantitative analysis and analytical methods of an advanced nature. Three lectures and one 4-hour lab per week. Permission required to register for 3 credits. (Spring only)

Prereqs: CHEM 253, CHEM 254, and CHEM 305**Prereqs or Coreqs:** CHEM 306**CHEM 455 Survey of Analytical Chemistry (3 credits)**

Fundamentals of modern analytical chemistry. Open only to chemistry M. S. and Ph. D. students. Credit is not allowed in both CHEM 454 and CHEM 455.

Prereqs: Permission**CHEM 463 Inorganic Chemistry (3 credits)**

Principles, complex ions and coordination compounds, theory of acids and bases, bonding theory, non-aqueous solvents, familiar elements and their relationship to the periodic table. (Fall only)

Prereqs: CHEM 305 or Permission**CHEM 464 Inorganic Chemistry (3 credits)**

Principles, complex ions and coordination compounds, theory of acids and bases, bonding theory, non-aqueous solvents, familiar elements and their relationship to the periodic table. Additional projects/assignments required for graduate credit. (Spring only)

Prereqs or Coreqs: CHEM 463, or CHEM 466, or Permission**CHEM 465 Inorganic Chemistry Laboratory (1 credit)**

Lab to accompany CHEM 464. One 3-hour lab per week. (Spring only)

Coreqs: CHEM 464

CHEM 466 Survey of Inorganic Chemistry (3 credits)

Fundamentals of modern inorganic chemistry. Open only to chemistry M. S. and Ph. D. students. Credit is not allowed in both CHEM 463 and CHEM 466.

Prereqs: CHEM 306 and Permission

CHEM 472 Medicinal Chemistry (3 credits)

Joint-listed with CHEM 572

A course at the interface of chemistry, biochemistry, and physiology, covering lipids/proteins/carbohydrates/nucleic acids as drug targets; discovery, design, optimization of pharmacodynamic and pharmacokinetic parameters, and development of drugs including overview of clinical trials; antibacterial/antiviral/anticancer agents and drugs acting on cholinergic and adrenergic nervous system; oligonucleotide-based therapeutics; emphasis on mechanism of drug action. Students give presentations on top-selling and/or highly prescribed drugs; graduate students write a report on a medicinal chemistry research article.

Prereqs: CHEM 277.

CHEM 473 Intermediate Organic Chemistry (3 credits)

Theories and mechanisms of organic chemistry. (Fall only)

Prereqs: CHEM 372

Prereqs or Coreqs: CHEM 306

CHEM 476 Survey of Organic Chemistry (3 credits)

Fundamentals of modern organic chemistry. Open only to chemistry M. S. and Ph. D. students. Credit is not allowed in both CHEM 473 and CHEM 476.

Prereqs: Permission

CHEM 491 (s) Research (1-6 credits, max 12)

Submission of a report of the research done for placement in the permanent department files is required.

Prereqs: Permission of department

CHEM 495 Statistical Thermodynamics (3 credits)

Cross-listed with PHYS 333

Classical thermodynamics, entropy, thermodynamic potentials, kinetic theory, classical and quantum statistical mechanics, ensembles, partition functions, introduction to phase transitions. Typically Offered: Spring (Even Years).

Prereqs: CHEM 306 or PHYS 305

CHEM 496 Survey of Physical Chemistry (3 credits)

Fundamentals of modern physical chemistry. Open only to chemistry M. S. and Ph. D. students. Credit is not allowed in both CHEM 495 and CHEM 496.

Prereqs: Permission

CHEM 498 (s) Internship (1-16 credits)

Credit arranged

CHEM 499 (s) Directed Study (1-16 credits)

Credit arranged

CHEM 500 Master's Research and Thesis (1-16 credits)

Credit arranged

CHEM 501 (s) Seminar (1 credit, max 2)**CHEM 502 (s) Directed Study (1-16 credits)**

Credit arranged

CHEM 503 (s) Workshop (1-16 credits)

Credit arranged

CHEM 504 (s) Special Topics (1-16 credits)

Credit arranged

CHEM 505 (s) Professional Development (1-16 credits)

Credit arranged

CHEM 506 Introduction to Teaching and Research Skills (2 credits)

Skills required of teaching assistants in laboratory, recitations, office hours, help sessions; skills required for research; use of library; introduction to faculty research. Graded P/F. (Fall only)

Prereqs: Permission

CHEM 511 Seminar (0 credits)**CHEM 518 Environmental Chemistry (3 credits)**

Joint-listed with CHEM 418

Chemistry of atmosphere, soil, and water; pollution monitoring and remediation; treatment of waste in the environment. Additional projects/ assignments required for graduate credit. (Spring only)

Prereqs: CHEM 253, CHEM 254, and CHEM 275 or CHEM 277, or Permission

CHEM 535 Electronics for Scientists (2-4 credits, max 4)

Theory and application of analog and digital electronics used in scientific instrumentation. Registration for CHEM 535 requires completion of an additional term paper or other assignment (Fall, alt/years).

Prereqs: Permission

CHEM 551 Electronic Spectrometry (2-3 credits, max 3)

A brief review of fundamental concepts, including electronic transitions, optical properties of materials, and laws of radiation absorption; detailed coverage of instrumentation used for ultraviolet and visible absorption spectroscopy, with regard to optical components, overall design strategy, and signal processing; analytical performance related to these aspects and presented from both theoretical and practical standpoints; in-depth coverage of luminescence spectroscopy, including phosphorimetry and fluorimetry; atomic spectroscopy (both flame and plasma-based versions), including principles of operation, instrumental requirements, and analytical application; survey of x-ray absorption and fluorescence spectroscopy. (Alt/years)

Prereqs: CHEM 454, CHEM 455 or Permission

CHEM 556 Molecular Spectroscopy (3 credits)

Interpretation of IR, UV, NMR, and mass spectra. Registration for CHEM 556 requires completion of additional assignments.

Prereqs: CHEM 306 or Permission

CHEM 558 Electrochemistry (2-3 credits, max 3)

Fundamental concepts of electrochemistry, including the principles of redox processes; in-depth treatment of electroanalytical techniques, especially voltammetric and potentiometric methods; advanced treatment of selected topics, including ultramicro and in vivo electrochemical techniques. (Alt/years)

Prereqs: CHEM 454, or CHEM 455, or Permission

CHEM 571 (s) Topics In Organic Chem (1-9 credits, max 9)

Selected topics from the current literature.

Prereqs: CHEM 473, CHEM 476, or Permission

CHEM 572 Medicinal Chemistry (3 credits)

Joint-listed with CHEM 472

A course at the interface of chemistry, biochemistry, and physiology, covering lipids/proteins/carbohydrates/nucleic acids as drug targets; discovery, design, optimization of pharmacodynamic and pharmacokinetic parameters, and development of drugs including overview of clinical trials; antibacterial/antiviral/anticancer agents and drugs acting on cholinergic and adrenergic nervous system; oligonucleotide-based therapeutics; emphasis on mechanism of drug action. Students give presentations on top-selling and/or highly prescribed drugs; graduate students write a report on a medicinal chemistry research article. Typically Offered: Unknown.

Prereqs: CHEM 277.

CHEM 590 Doctoral Research Proposal (1 credit)

Taken no later than one semester after completion of cumulative exams; required for advancement to Ph. D. candidacy. Includes review of relevant literature and original research proposal describing the student's intended research project.

CHEM 598 (s) Internship (1-16 credits)

Credit arranged

CHEM 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

CHEM 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Chinese (CHIN)

Vertically-related courses in this subject field are:

- CHIN 101 - CHIN 102 - CHIN 201 - CHIN 202

Any 300-level CHIN course may be considered the terminal course for the related vertical sequence above. A maximum of 16 credits may be earned for vertical credit in any language in the School of Global Studies.

CHIN 101 Elementary Chinese I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Writing system, pronunciation, vocabulary, and functional grammar. Students identified by the instructor as having some degree of Chinese proficiency must take the placement exam. Students with Chinese experience who place higher than 101 on the placement exam may not enroll in CHIN 101, but may earn credit for CHIN 101 by successfully completing a higher vertically-related course. Typically Offered: Every Fall.

CHIN 102 Elementary Chinese II (4 credits)

General Education: International

Writing system, pronunciation, vocabulary, and functional grammar. Students identified by the instructor as having some degree of Chinese proficiency must take the placement exam. Students with Chinese experience who place higher than 102 on the placement exam may not enroll in CHIN 102, but may earn credit for CHIN 102 by successfully completing a higher vertically-related course. Typically Offered: Spring.
Prereqs: CHIN 101 or placement exam

CHIN 107 Beginning Chinese Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the beginning Chinese level. Graded P/F.

CHIN 201 Intermediate Chinese I (4 credits)

General Education: International

Review and practice of basic language skills; increased emphasis on reading, writing, and free discussion. Typically Offered: Fall.

Prereqs: CHIN 102 or placement exam

CHIN 202 Intermediate Chinese II (4 credits)

General Education: International

Review and practice of basic language skills; increased emphasis on reading, writing, and free discussion. Typically Offered: Spring.

Prereqs: CHIN 201 or placement exam

CHIN 204 (s) Special Topics (1-16 credits)

Credit arranged

CHIN 207 Intermediate Chinese Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the intermediate Chinese level. Graded P/F.

CHIN 299 (s) Directed Study (1-16 credits)

Credit arranged

CHIN 310 Advanced Chinese 1: Oral Communication (3 credits)

This course will focus on improving oral expression to develop greater fluency, accuracy, and confidence in spoken Chinese. Conversational topics are based on contemporary issues in Chinese-speaking regions. This course will enhance students' advanced conversational skills through descriptions, summaries of texts, active participation in discussions, debates and oral presentations in class.

Prereqs: CHIN 202 or equivalent

CHIN 312 Advanced Chinese 2: Reading & Translation (3 credits)

This course will focus on improving students' competency in reading and translating written Chinese. In this course students will enhance their reading fluency and will learn to translate from Chinese to English and English to Chinese. The selection of texts will be limited to modern literature, documents, and news items on Chinese culture and international affairs. In their translations students will learn to focus on accuracy as well as stylistic appropriateness.

Prereqs: CHIN 202 or equivalent

CHIN 314 Advanced Chinese 3: Writing & Grammar (3 credits)

This course will focus on improving students' competency in written Chinese and grammar. This course will increase students' linguistic competence by focusing on introducing advanced Chinese grammar and rhetoric; standards of composition and written communication; and comprehensive training in Chinese writing.

Prereqs: CHIN 202 or equivalent

CHIN 398 (s) Internship (1-3 credits, max arranged)**CHIN 404 (s) Special Topics (1-16 credits)**

Credit arranged

CHIN 498 (s) Internship (1-16 credits)

Credit arranged

CHIN 499 (s) Directed Study (1-16 credits)

Credit arranged

Civil Engineering (CE)

CE 105 Civil Engineering Drafting (3 credits)

Freehand and computer aided drawing in pictorial and orthographic projection; section and auxiliary views; descriptive geometry; graphical presentation of data; scales, dimensioning, and measurements. Two lectures and one 2-hour lab per week.

CE 115 Introduction to Civil Engineering (1 credit)

Introduction to civil engineering problem solving skills, development of software use skills, graphical analysis, data analysis, and oral and written communication skills. One weekly two hour laboratory with up to 3 out-of-class activities.

Prereqs: Major in civil engineering

CE 200 (s) Seminar (1-16 credits)

Credit arranged

CE 203 (s) Workshop (1-16 credits)**CE 204 (s) Special Topics (1-16 credits)**

Credit arranged

CE 211 Engineering Surveying (3 credits)

Theory of measurements, basic equations for survey computations, types of distribution of errors, topographical and land surveying introduction to geographic information systems and global positioning systems, coordinate geometry and coordinate transformations, site engineering projects using land development software, application of surveying methods to construction, site engineering, and civil engineering projects surveying instruments. Two lecture and one 3-hour lab per week; periodic field data collection and one or two field trips.

Prereqs: 'C' or better in CE 105 and MATH 170

CE 215 Civil Engineering Analysis and Design (3 credits)

Application of basic science, mathematics, and fundamental engineering principles to solution of civil engineering design problems; use of structured programming concepts in design; develop oral and written communication skills. Typically Offered: Spring.

Prereqs: CE 115, CE 105, and MATH 170. A minimum grade of 'C' or better is required for all pre/coreqs. A minimum grade of 'C' or better is required for all pre/coreqs.

Coreqs: STAT 301

CE 298 (s) Internship (1-16 credits)

Credit arranged

CE 299 (s) Directed Study (1-16 credits)

Credit arranged

CE 322 Hydraulics (4 credits)

Applied principles of fluid mechanics; closed conduit flow, hydraulic machinery, open channel flow; design of hydraulic systems. Laboratory exercises on closed conduit flow, hydraulic machinery, open channel flow and mixing process. Three lec a week and 4-6 labs a semester.

Prereqs: CE 215, MATH 310, PHYS 211, ENGR 220 and ENGR 335. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 325 Fundamentals of Hydrologic Engineering (3 credits)

Cross-listed with BE 355

Principles of hydrologic science and their application to the solution of hydraulic, hydrologic, environmental, and water resources engineering problems.

Prereqs: MATH 310, STAT 301, and ENGR 335. A minimum grade of 'C' or better is required for all pre/coreqs.

CE 330 Fundamentals of Environmental Engineering (3 credits)

This course provides an introduction to environmental engineering. Focus areas include water sources and drinking water treatment, wastewater treatment and water reuse, and solid and hazardous waste management. Quantitative aspects and engineering solutions to environmental problems are emphasized.

Prereqs: CHEM 111, CE 215 and MATH 310. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 342 Theory of Structures (3 credits)

Stresses and strains in statically determinate and indeterminate beam, truss, and rigid frame structures; effects of moving loads; matrix displacement method. Two lectures and one 2-hour lab per wk.

Prereqs: ENGR 350, MATH 275, MATH 310, and PHYS 211/PHYS 211L. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 357 Properties of Construction Materials (4 credits)

Principles of construction materials, composition, physical and mechanical properties, test methods, data analysis and interpretations, and report writing; materials covered are aggregates, cements, concretes, metals, wood, and composites. Three lectures and two hours of lab.

Prereqs: CE 215, ENGR 350, MATH 310. A minimum grade of 'C' or better is required for all pre/corequisites. A minimum grade of 'C' or better is required for all pre/corequisites.

Coreqs: STAT 301

CE 360 Fundamentals of Geotechnical Engineering (4 credits)

Soil composition, descriptions, and classification systems; permeability and seepage; capillarity and suction; total, effective, and neutral stresses, compression and volume changes; shear strength; compaction. Three lectures and 2 hours of lab per week.

Prereqs: CE 215, ENGR 335, ENGR 350, and MATH 310. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 372 Fundamentals of Transportation Engineering (3 credits)

Intro to planning, design, and operation of highway and traffic, public transportation, and airport systems. Three lectures a week; periodic field data collection and one or two field trips.

Prereqs: STAT 301 and CE 211. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 398 (s) Internship (1-16 credits)

Credit arranged

CE 400 (s) Seminar (1-16 credits)

Credit arranged

CE 403 (s) Workshop (1-16 credits)

Credit arranged

CE 404 (s) Special Topics (1-16 credits)

Credit arranged

CE 411 Engineering Fundamentals (1 credit)

Review of basic engineering and science material covered in Fundamentals of Engineering exam. Offered for the nine to ten week period prior to the exam date. Graded P/F.

Prereqs: Senior standing or Permission

CE 413 Bridge Design (3 credits)

Joint-listed with CE 513

Structural systems for bridges, loading analysis by influence lines, slab and girder bridges, composite design, pre-stressed concrete, rating of existing bridges, specifications, and economic factors.

Prereqs: CE 441 or CE 444

CE 415 Timber Design (3 credits)

Joint-listed with CE 515

Design and detailing of wood structural components. Application to industry problems. Additional work required for graduate level credit. Typically Offered: Fall (Even Years).

Prereqs: A minimum grade of 'C' or better in CE 342.

CE 421 Engineering Hydrology (3 credits)

Hydrologic design including: statistical methods, rainfall analysis and design storm development, frequency analysis, peak discharge estimation, hydrograph analysis and synthesis, flow routing, and risk analysis. Typically Offered: Fall.

Prereqs: CE 325 or BE 355. A minimum grade of 'C' or better is required for all pre/corequisites. Cooperative: open to WSU degree-seeking students.

CE 422 Hydraulic Structures Analysis and Design (3 credits)

Hydraulic design and stability analysis of hydraulic structures, such as dams, weirs, spillways, stilling basins, culverts, levees, fish ladders etc. Project oriented problems. Extra design projects or different design projects for graduate credit. One field trip. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 322 or Equivalent, ENGR 360, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 428 Open Channel Hydraulics (3 credits)

Hydraulics of uniform and varied flow in open channels with fixed and movable beds. Recommended Preparation: CE 322. Cooperative: open to WSU degree-seeking students.

CE 431 Design of Water and Wastewater Systems I (3 credits)

Joint-listed with CE 511

Application of fundamental engineering science to the design of systems for the treatment of domestic and industrial water supplies; treatment and re-use of domestic sewage and industrial wastes. Additional projects/assignments required for graduate credit.

Prereqs: CE 322, CE 330, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 432 Design of Water and Wastewater Systems II (3 credits)

Joint-listed with CE 532

Application of unit operations and processes to design of integrated wastewater treatment systems; critical analysis of existing designs. Additional projects/assignments required for grad credit. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 431. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 441 Reinforced Concrete Design (3 credits)

Strength design method in accordance with latest ACI code. Two lectures and one 2-hour lab per week.

Prereqs: CE 342. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 444 Steel Design (3 credits)

Structural steel design using latest AISC specifications. Two lectures and one 2-hour lab per week, possible field trip.

Prereqs: 'C' or better in CE 342

CE 445 Matrix Structural Analysis (3 credits)

Joint-listed with CE 545

Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, and nonlinear analysis. Special project demonstrating mature understanding of materials required for graduate credit.

Prereqs: CE 342 or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 460 Geotechnical Engineering Design (3 credits)

Applications of soil mechanics in design of shallow and deep foundations, earth retaining structures, excavations, and soil exploration.

Prereqs: CE 360 or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 474 Traffic Systems Design (3 credits)

Analysis and design of network traffic systems; system evaluation using computer optimization and simulation; development and testing of alternative system design. Two lec and one 3-hr lab a wk; field data collection and field site visits. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 372 or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 475 Pavement Design and Evaluation (3 credits)

Pavement design processes; stress-strain analysis in multi-layer elastic system; materials selection and characterization methods; traffic loads, design methods for flexible and rigid pavements; performance evaluation of existing pavements; condition survey and ratings; introduction to pavement maintenance and rehabilitation techniques.

Prereqs: CE 357 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 484 Engineering Law and Contracts (3 credits)

Project engineering techniques for planning, scheduling, and controlling typical engineering and construction projects. Contract law and application to engineering services agreements and construction contracts; preparing technical specifications, torts, professional liability, and alternate dispute resolution.

Prereqs: Senior standing in engineering

CE 491 Civil Engineering Professional Seminar (2 credits)

Employment and technical topics; professional writing; ethics; preparation for Senior Design Project.

Prereqs: Senior standing in Civil Engineering

CE 493 Senior Design I (2 credits)

General Education: Senior Experience

This course focuses on professional and leadership skills, including career pathways, oral and written communication, participatory methods, ethics, and sustainability. Typically Offered: Fall.

Prereqs: Senior standing in Civil Engineering; and Permission

CE 494 Senior Design II (3 credits)

General Education: Senior Experience

Comprehensive civil engineering design project. Requires integration of skills acquired in civil engineering elective courses, written reports, and oral presentations. Typically Offered: Spring.

Prereqs: CE 493; Senior standing in Civil Engineering; and Permission

CE 498 (s) Internship (1-16 credits)**CE 499 (s) Directed Study (1-16 credits)**

Credit arranged

CE 500 Master's Research and Thesis (1-16 credits)

Credits arranged

CE 501 (s) Seminar (1-16 credits, max arranged)

Credit arranged. Conferences and reports on current developments.

CE 502 (s) Directed Study (1-16 credits)

Credits arranged

CE 503 (s) Workshop (1-16 credits)

Credit arranged

CE 504 (s) Special Topics (1-16 credits)

Credit arranged

CE 505 (s) Professional Development (1-16 credits)**CE 510 Advanced Mechanics of Materials (3 credits)**

Cross-listed with ME 539

Limitations of results of elementary mechanics of materials, complex situations of loading and structural geometry, applications to design of machines and structure, introduction to elasticity. Cooperative: open to WSU degree-seeking students.

Prereqs: ME 341 or CE 342

CE 511 Design of Water and Wastewater Systems I (3 credits)

Joint-listed with CE 431

Application of fundamental engineering science to the design of systems for the treatment of domestic and industrial water supplies; treatment and re-use of domestic sewage and industrial wastes. Additional projects/assignments required for graduate credit.

Prereqs: CE 322, CE 330, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 512 Advanced Topics in Waste Management and Treatment (3 credits)

Modeling, analysis, and design of advanced and emerging engineering technologies and processes for waste management/treatment and resource recovery.

Prereqs: Instructor Permission

CE 513 Bridge Design (3 credits)

Joint-listed with CE 413

Structural systems for bridges, loading analysis by influence lines, slab and girder bridges, composite design, pre-stressed concrete, rating of existing bridges, specifications and economic factors. Cooperative: Open to WSU degree-seeking students.

Prereqs: CE 441 or CE 444

CE 515 Timber Design (3 credits)

Joint-listed with CE 415

Design and detailing of wood structural components. Application to industry problems. Additional work required for graduate level credit. Typically Offered: Fall (Even Years).

CE 520 Fluid Dynamics (3 credits)

Cross-listed with ME 520

Joint-listed with ME 420

Credit not granted for both ME 420 and ME 520. A second fluid dynamics course featuring vector calculus and integral and differential forms of the conservation laws. Topics include fluid properties, fluid statistics, inviscid flow; conservation of mass, momentum, and energy; and turbulence. Other topics may be covered. Additional projects/assignments required for graduate credit.

Prereqs: ENGR 335, MATH 310, or Permission

CE 521 Sedimentation Engineering (3 credits)

Intro to river morphology and channel responses; fluvial processes of erosion, entrainment, transportation, and deposition of sediment. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 428 or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 522 Hydraulic Structures Analysis and Design (3 credits)

Hydraulic design and stability analysis of hydraulic structures, such as dams, weirs, spillways, stilling basins, culverts, levees, fish ladders etc. Project oriented problems. Extra design projects or different design projects for grad cr. One field trip. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 322 or Equivalent, ENGR 360, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 526 Aquatic Habitat Modeling (3 credits, max 6)

The course objective is to learn the underlying principles of all components required for aquatic habitat modeling, to be able to perform such projects in riverine ecosystems including project design, data collection, data analysis and interpretation of the results and to learn the use of computational aquatic habitat models. Students will be working on their own modeling projects using the simulation model CASiMiR.

Prereqs: CE 322 and CE 325 or BE 355; or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 532 Design of Water and Wastewater Systems II (3 credits)

Joint-listed with CE 432

Application of unit operations and processes to design of integrated wastewater treatment systems; critical analysis of existing designs.

Additional projects/assignments required for grad credit. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 431. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 535 Fluvial Geomorphology and River Mechanics (3 credits)

Hydraulic and morphologic processes of rivers. Drainage network development, channel hydraulics and shear stress partitioning via boundary layer theory, hydraulic geometry and cross-sectional form, sediment transport and bed material sampling, reach-scale morphologies and processes from headwater streams to lowland rivers, physical processes of forest rivers, sediment budgets, and river valley evolution. Field exercises emphasize quantitative analysis of fluvial processes and channel form, acquisition of field skills (measuring hydraulic and geomorphic variables, topographic surveying), and scientific writing. (Alt/ yrs)

Prereqs: CE 428 or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 535L Geomorphology Lab (1 credit)

This is the companion laboratory course to CE 535. Two to three 1-day field trips to local rivers for measurement of channel conditions and assessment of river history. Students will gain hands-on experience in commonly used instrumentation and methods for quantifying river processes. Typically Offered: Fall.

Prereqs: Instructor permission

CE 541 Reliability of Engineering Systems (3 credits)

Cross-listed with ME 583

Fundamentals of reliability theory, system reliability analysis including common-mode failures and fault tree and event tree analysis, time-dependent reliability including testing and maintenance, propagation of uncertainty, human reliability analysis, practical applications in component and system design throughout the semester. Cooperative: open to WSU degree-seeking students.

Prereqs: Permission

CE 542 Advanced Design of Steel Structures (3 credits)

Plate girder design; local and global buckling; plastic collapse analysis; shear and moment-resisting connections; eccentrically-loaded connections. Possible field trip. Cooperative: open to WSU degree-seeking students.

Prereqs: 'C' or better in CE 444 or Permission

CE 543 Dynamics of Structures (3 credits)

Equations of motion, free vibration, damping mechanisms, harmonic, impulse, and seismic loading; shock and seismic response spectra, time and frequency domain analysis, modal analysis, structural dynamics in building codes. Cooperative: open to WSU degree-seeking students.

CE 545 Matrix Structural Analysis (3 credits)

Joint-listed with CE 445

Formulation of the analysis of trusses, beams, and frames using the stiffness method of matrix structural analysis; development of element properties, coordinate transformations, and global analysis theory; special topics such as initial loads, member and joint constraints, and nonlinear analysis. Special project demonstrating mature understanding of materials required for graduate credit.

Prereqs: CE 342 or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 546 Finite Element Analysis (3 credits)

Cross-listed with ME 549

Formulation of theory from basic consideration of mechanics; applications to structural engineering, solid mechanics, soil and rock mechanics; fluid flow. Cooperative: open to WSU degree-seeking students.

Prereqs: ME 341 or CE 342. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 550 Experimental Methods in Fluid Dynamics (3 credits)

Cross-listed with ME 551

Joint-listed with ME 450

The objective of this course is to develop the knowledge and skills to be able to design and perform fluid dynamics experiments (and experiments in related areas) and to interpret and report the results. Learn the words, the concepts, and experimental skills in areas including dimensional analysis and scaling of experiments, flow visualization, velocity and flow rate measurements, turbulence measurements, and sediment sizing and transport measurements. Additional projects/assignments required for graduate credit. One 1-1/2 hr lecture and one 3-hour lab per week. Recommended Preparation: ENGL 317 and ENGR 335

CE 554 Environmental Hydrodynamics (3 credits)

The course analyzes solute transport and mixing in rivers. It provides the derivation and analysis of the equations governing solute mixing and transport and shows the connection between mixing and flow field. It presents molecular and turbulent diffusion, dispersion, vertical, lateral, and longitudinal mixing, and the effects of river irregularities and curved channels. The course includes individual projects.

Prereqs: CE 428 or permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 555 Center for Ecohydraulics Research Keystone Course (3 credits)

This class prepares students to independently conduct their own research project. Students apply fundamental knowledge in biology, engineering, and/or geomorphology to solve an applied research problem. Students will work in interdisciplinary teams to conduct a research project from beginning to end. To test their hypotheses, students will conduct laboratory flume measurements and use applied statistics. Techniques in scientific writing, scientific presentations, and literature review will also be taught over the semester. Students will write the results of their investigations into a scientific research paper.

Prereqs: MATH 175 and PHYS 211

CE 556 Properties of Highway Pavement Materials (3 credits)

Physical and mechanical properties of asphalt and Portland cement concrete materials; design of asphalt concrete mixes; introduction to viscoelastic theory; characterization methods, emphasizing fatigue, rutting and thermal cracking; modification and upgrading techniques. Three 1-hour lectures per week and variable number of lab hours for demonstration. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 357 or equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 561 Engineering Properties of Soils (3 credits)

Physical properties, compressibility and consolidation, shear strength, compaction, saturated and unsaturated soils, laboratory and field methods of measurement, relations of physical and engineering properties, introduction to critical-state soil mechanics. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 360. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 562 Advanced Foundation Engineering (3 credits)

Interpretation of in-situ tests for foundation design parameters, bearing capacity and settlement of axially loaded piles, pile groups, and drilled shafts, pile dynamics, laterally loaded deep foundations, downdrag and uplift of deep foundations, foundation load and integrity testing methods and data interpretation, mat foundations. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 360 or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 563 Seepage and Slope Stability (3 credits)

Cross-listed with GEOE 535

Principles governing the flow of water through soils; mechanics of stability analysis of slopes, landslides, and embankments for soil and rock masses; probabilistic analyses; stabilization methods. Cooperative: open to WSU degree-seeking students. (Alt/even years, Spring only)

Prereqs: CE 360 or GEOE 436; or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 566 Geotechnical Earthquake Engineering (3 credits)

Faulting and seismicity; site response analysis; probabilistic seismic hazard assessment; dynamic soil properties; influence of soil on ground shaking; response spectra; soil liquefaction; seismic earth pressures; seismic slope stability; earthquake resistant design. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 360 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 571 Traffic Flow Theory (3 credits)

Introduction to elements of traffic flow theory including principles of traffic stream characteristics, capacity, queuing theory, and shock waves; application of traffic flow theory to freeway and arterial traffic flow problems. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: Permission

CE 572 Intersection Traffic Operations (3 credits)

Application of traffic simulation models to the design and operations of traffic facilities, including intersection, arterials; assessment and design of traffic signal timing strategies. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: Permission

CE 573 Transportation Planning (3 credits)

Concepts and methods of transportation planning, including network modeling, travel demand forecasting, and systems evaluation of multi-modal transportation systems. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: Permission

CE 574 Public Transportation (3 credits)

Concepts and principles of planning and operations of public transportation systems, including bus transit, rail transit, and paratransit modes. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: Permission

CE 575 Advanced Pavement Design and Analysis (3 credits)

Design of new and rehabilitated asphalt and Portland cement concrete pavements; mechanistic-empirical design procedures; performance models; deflection-based structural analysis, overlay design, environmental effects; long-term pavement performance (LTPP), and introduction to research topics in pavement engineering. Cooperative: open to WSU degree-seeking students.

Prereqs: CE 475 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites.

CE 577 Pavement Preservation and Management (3 credits)

This course addresses several aspects of pavement evaluation, preservation, rehabilitation, and management. The primary objective of this course is to provide the civil engineering graduate students with state-of-the-art knowledge needed to maintain our roadways in serviceable condition. The course covers different methods used to evaluate the performance of pavements, distresses in flexible and rigid pavements, project and network level pavement management, various preservation and rehabilitation techniques and selection of the appropriate approaches for preservation and rehabilitation.

Prereqs: CE 475 or Equivalent, or Permission. A minimum grade of 'C' or better is required for all pre/corequisites. Cooperative: open to WSU degree-seeking students.

CE 585 Rigid and Airport Pavement Design (3 credits)

Design and evaluation of rigid and airport pavement. Cooperative: open to WSU degree-seeking students. Recommended preparation: CE 475 or permission. Typically Offered: Spring (Odd Years).

CE 598 (s) Internship (1-16 credits)

Credit arranged

CE 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

CE 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

College of Art & Architecture (CAA)

CAA 204 (s) Special Topics (1-16 credits)

Credit arranged

CAA 321 CAA Ambassador (1 credit, max 2)

Represent academic program and college at recruiting and other public events, developing skills in professional relations, leadership, communication, networking, and public speaking. Attending university and college recruiting events, visiting high schools or community colleges, and communicating with prospective students is required.

College of Graduate Studies (GRAD)

GRAD 710 Continuous Enrollment (0 credits)

Non-academic course in which graduate students may register in place of credit-bearing courses any semester they are not attending the University of Idaho in order to maintain continuous enrollment.

GRAD 720 Finishing Status (0 credits)

Non-academic course in which graduate students may register who have completed their coursework and research work and are in the final semester of completing their thesis or dissertation.

Communication (COMM)

COMM 101 Fundamentals of Oral Communication (3 credits)

General Education: Oral Communication

Skills and techniques of effective speaking. Typically Offered: Fall and Spring.

COMM 111 Introduction to Communication (3 credits)

Introduction to historical and intellectual development of the primary subfields within communication, including interpersonal, small group, intercultural, digital, and organizational communication, in order to build competence as critical consumers of communication content. Typically Offered: Fall.

COMM 150 Online Oral Communication (3 credits)

General Education: Oral Communication

This course provides the skills, techniques, and knowledge needed to engage in effective oral communication in online contexts.

COMM 200 (s) Seminar (1-16 credits)

Credit arranged

COMM 203 (s) Workshop (1-16 credits, max arranged)

Credit arranged. May be graded P/F.

Prereqs: Permission

COMM 204 (s) Special Topics (1-16 credits)

Credit arranged

COMM 233 Interpersonal Communication (3 credits)

General Education: Social and Behavioral Ways of Knowing

Communication concepts and skills applied to relationship management; communication process, listening, self-disclosure, perception, conflict.

COMM 240 Small Group Communication (3 credits)

An introduction to theory and practice of communicating in small, task-oriented groups. Skills include developing group problem-solving strategies, enhancing awareness of small group dynamics, and building an understanding of the theoretical foundation(s) of small group communication.

COMM 299 (s) Directed Study (1-16 credits)

Credit arranged

COMM 335 Intercultural Communication (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Survey of current theories and research on intercultural communication; development of critical thinking skills in regard to intercultural interaction and communication styles. Typically Offered: Fall and Spring.

COMM 340 Family Communication (3 credits)

This course provides an overview of family communication theories and applications by examining functional and dysfunctional family communication patterns and relationships, diverse family systems, roles and rules in the family, and power dynamics.

COMM 347 Persuasion (3 credits)

Persuasive communication principles as they guide social interactions and persuasive dialogue.

COMM 355 Organizational Communication (3 credits)

Overview of current theory and research in organizational communication; examining organizational structure, organizational culture, leadership, organizational change, management systems and power relationships.

COMM 359 Communication Research Methods (3 credits)

Aims and methods of quantitative and qualitative research designs used by communication scholars.

Prereqs: STAT 153, STAT 251, or PSYC 215; Communication major; Junior standing

COMM 400 (s) Seminar (1-16 credits)

Credit arranged

COMM 403 (s) Workshop (1-16 credits)

Credit arranged May be graded P/F.

Prereqs: Permission

COMM 404 (s) Special Topics (1-16 credits)

Credit arranged

COMM 410 Conflict Management (3 credits)

General Education: Social and Behavioral Ways of Knowing

Gen Ed: Social Science Principles of effective conflict management in various settings; emphasis on styles of conflict, power, goals, strategies and intervention techniques as well as negotiation in the conflict process.

COMM 421 Nonverbal Communication (3 credits)

Current theories, research and applied principles of nonverbal communication; in-depth examination of human social and biological development of nonverbal codes, and the role of nonverbal expression in intercultural, interspecies, mediated and organizational contexts.

COMM 431 Applied Business and Professional Communication (3 credits)

Principles, skills development, and practical applications of public communication within business and other organizational contexts; emphasis on using media for creating business presentations and on the role of effective communication in career management and civic and community development. Recommended Preparation: COMM 101 or COMM 150; COMM 355.

COMM 432 Gender and Communication (3 credits)

General Education: American Diversity

The nature of interpersonal communication and gender; identification, interpretation, and analyses of theories that offer explanations of gender and culture in interpersonal interactions. Typically Offered: At least once per year.

COMM 438 Crisis Communication (3 credits)

Communication and crisis are inherently intertwined; crisis necessitates communication from individuals, organizations, and stakeholders across a myriad of internal and external contexts. As such, this course focuses on key communication factors of crisis and crisis management. Students will examine theoretical foundations and strategies and apply practical principles to crisis communication planning and management with internal and external stakeholders.

COMM 453 Communication Theory (3 credits)

General Education: Senior Experience

A survey of established theories and theoretical traditions in the Communication discipline, with an emphasis on understanding how theory is developed and applied to solve real world problems.

Prereqs: Communication major, Junior standing

COMM 456 Nonprofit Fundraising (3 credits)

Explores theory and practice of fundraising for nonprofit groups. Surveys public campaigns and communication strategies, fundraising methods, ethics of fundraising, and fundraising leadership/management. Students will develop methods of evaluation for fundraising, and do so by case studies and preparation for fundraising campaigns.

COMM 460 Technology and Communication (3 credits)

An introduction to theories and processes of technology in communication. Areas covered include factors that distinguish mediated from face-to-face interaction, theories of mediated interpersonal communication, self-presentation online, Internet-based relationships, and online communities. Ultimately, this course is designed to critically examine how technology alters human communication and our ability to form meaningful interpersonal relationships. Typically Offered: Varies.

COMM 492 Dark Side of Communication (3 credits)

Interdisciplinary study of how individuals cope with difficult, problematic, distressing, and disruptive social interaction. Topics included are the "hidden and forbidden" aspects of personal relationships that are often neglected by social scientists. Recommended Preparation: COMM 233.

COMM 494 (s) Research Experience (1-16 credits)

Credit arranged Supervised experience in conducting communication studies research. Available topics vary depending on current faculty research interests.

Prereqs: Permission

COMM 497 Practicum in Instruction (1-3 credits, max 6)

Tutoring and/or instructional services performed by advanced students under faculty supervision.

Prereqs: Permission

COMM 498 (s) Internship (1-3 credits, max arranged)

Graded P/F

Prereqs: Permission

COMM 499 (s) Directed Study (1-16 credits)

Credit arranged

Community Based Leadership (CLDR)

CLDR 220 Introduction to Human and Community Engagement (1 credit)

Cross-listed with HDFS 220

This course aims to prepare students to discover initiatives and opportunities for personal and professional engagement in their communities. Students will identify individual and community-based issues through an overview of basic human and community development theories and models. Students will examine the volunteerism, efforts, programs, policies, and practices of governmental agencies, charitable foundations, non-governmental organizations, and other community-based initiatives in the local area. Students will recognize their role as a citizen and opportunities for harnessing their talents through human and community engagement. Typically Offered: Spring.

CLDR 360 Leadership and Community Dynamics (3 credits)

Joint-listed with CLDR 560

This course aims to prepare students to address complex personal, organizational, and societal issues facing communities today through an exploration of traditional and contemporary leadership models, theories, and styles. Students will examine community-based problems and the role of formal and nonformal leadership in providing viable solutions for public and private domains. Designed to help students develop leadership competencies and enhance their strengths by thinking beyond role-based skills in organizational and community development. Additional projects/ assignments required for graduate credit.

CLDR 380 Change and Power in a Global Society (3 credits)

Joint-listed with CLDR 480

This course explores models, theories, and competencies relating to change and becoming global change agents. Designed to promote an awareness and understanding of local and global issues. Students will be challenged to critically analyze barriers and constraints related to change, including: social and political influence, power dynamics, financial constraints, and complexity. Students will have the opportunity to gain perspective on the role of leadership and appropriate strategies for approaching issues with attention to stakeholders, inclusion, and cultural contexts. Additional projects/assignments required for graduate credit. Typically Offered: Fall (Even Years).

CLDR 404 (s) Special Topics (1-16 credits)

Credit arranged

CLDR 420 Advanced Human and Community Engagement Experience (2-5 credits)

Cross-listed with HDFS 420

Formalized service-learning experience with community-based organization(s). Students commit a minimum of 40 hours of volunteerism/community engagement per semester credit. At least 40 hours must be with the preapproved organization and supervisor. Requires completion of a formal proposal. Typically Offered: Fall, Spring and Summer.

Prereqs: CLDR 220 or HDFS 220, and enrollment in final semester of Human and Community Engagement Minor

CLDR 450 Leading People and Teams (3 credits)

Cross-listed with AGED 450

Joint-listed with AGED 550

This course focuses on leadership and communication in groups and teams through an exploration of team-based leadership and shared visions. Students will develop a better understanding of themselves as leaders and followers and the role of others as leaders and followers within a community. Topics include: community-based models and theories related to effective groups and teams, processes of teams, team management, relationships in teams, creating a shared mission and vision among members, improving and evaluating team performance, determining leadership strategies based on team dynamics, and shared leadership. Recommended preparation: AGED 251

CLDR 480 Change and Power in a Global Society (3 credits)

Joint-listed with CLDR 380

This course explores models, theories, and competencies relating to change and becoming global change agents. Designed to promote an awareness and understanding of local and global issues. Students will be challenged to critically analyze barriers and constraints related to change, including: social and political influence, power dynamics, financial constraints, and complexity. Students will have the opportunity to gain perspective on the role of leadership and appropriate strategies for approaching issues with attention to stakeholders, inclusion, and cultural contexts. Additional projects/assignments required for graduate credit. Typically Offered: Fall (Even Years).

CLDR 504 (s) Special Topics (1-16 credits)

Credit arranged

CLDR 560 Leadership and Community Dynamics (3 credits)

Joint-listed with CLDR 360

This course aims to prepare students to address complex personal, organizational, and societal issues facing communities today through an exploration of traditional and contemporary leadership models, theories, and styles. Students will examine community-based problems and the role of formal and nonformal leadership in providing viable solutions for public and private domains. Designed to help students develop leadership competencies and enhance their strengths by thinking beyond role-based skills in organizational and community development. Additional projects/assignments required for graduate credit.

Computer Science (CS)

Vertically-related courses in this subject field are:

- CS 120 – CS 121.

CS 112 Computational Thinking and Problem Solving (3 credits)

General Education: Mathematical Ways of Knowing

Introduction to computational thinking and problem solving, including elementary computing concepts such as variables, loops, functions, lists, conditionals, concurrency, data types, simple object oriented concepts, I/O, events, syntax, structured programming, basic concepts of computer organization, editing and the influence of computers in modern society.

Prereqs: MATH 108 with a grade of 'C' or better; or sufficiently high ACT, SAT, or Math Placement Test score to qualify for MATH 143.

CS 120 Computer Science I (4 credits)

Fundamental programming constructs, algorithms and problem-solving, fundamental data structures, overview of programming languages, virtual machines, introduction to language translation, declarations and types, abstraction mechanisms, object-oriented programming. This course includes a lab.

Prereqs: MATH 143 with a grade of 'C' or higher or CS 112 with a grade of 'C' or higher; or sufficiently high ACT, SAT, or Math Placement Test score to qualify for MATH 170

CS 121 Computer Science II (3 credits)

Abstract data types and data structures: linked lists, stacks, queues, trees, and graphs. Methods to implement and algorithms to manipulate these structures. Dynamic memory methods, sequential file processing, additional searching and sorting algorithms, recursion, and object-oriented programming.

Prereqs: CS 120 with a grade of 'C' or higher

Coreqs: MATH 176

CS 150 Computer Organization and Architecture (3 credits)

Digital logic and digital systems, Machine level representation of data, Assembly level machine organization, Memory system organization and architecture, Interfacing and communication, Functional organization, Multiprocessing and alternative architectures.

Prereqs: CS 120

CS 204 (s) Special Topics (1-16 credits)

Credit arranged

CS 210 Programming Languages (3 credits)

Major features of good programming languages, with primary emphasis on language features and their role in writing good software; programming language design alternatives; various types of languages, including procedure, data-flow, functional, and object-oriented languages.

Prereqs: CS 121

CS 212 Practical Python (3 credits)

This course is an introduction to Python programming fundamentals. It will cover the basics of Python, good algorithm design, and development. Topics include Python types, data structures, and objects. It will include hands-on programming in a variety of applications of Python from multiple application areas. Major general-purpose Python modules including numeric and graphing modules will be explored.

Prereqs: MATH 143 or equivalent

CS 240 Computer Operating Systems (3 credits)

Overview of operating systems, Operating system principles, Concurrency, Scheduling and dispatch, Memory management, Introduction to net-centric computing, OS security. Process management. Concurrent programming using threads.

Prereqs: CS 121 and CS 150

Coreqs: CS 270

CS 270 System Software (3 credits)

Programming productivity tools such as make. Debugging tools. Linking and loading. Shell programming and scripting languages. Process management and interprocess communication. Exception handling. Network concepts and network programming.

Prereqs: CS 121

CS 298 (s) Internship (1-16 credits)

Credit arranged

CS 299 (s) Directed Study (1-16 credits)

Credit arranged

CS 324 Computer Graphics (3 credits)

Use of the computer to define, store, manipulate, and display 2D and 3D objects; 2D curvefitting and 3D surface development. Cooperative: open to WSU degree-seeking students.

Prereqs: CS 121 and MATH 330

CS 328 Introduction to Computer Game Development (3 credits)

An introduction to data structures, algorithms, and programming techniques useful in the development of computer games. Topics including 2D graphics, sound programming, user interfaces, game genres, computerization of classic board games and simulation games.

Prereqs: CS 210 and CS 240

CS 336 Introduction to Information Assurance (3 credits)

Introduces the confidentiality, availability and integrity goals of information systems; resistance, recognition and response categories of assurance. Focus on computer security and survivability, including cryptography, network security, general purpose operating system security and dependability and special purpose systems for high assurance security and dependability.

Prereqs: CS 240

CS 355 Introduction to Robotics (3 credits)

This introductory course studies the fundamentals of robotics/mechatronics systems and their programming. We examine the entire robotic stack (Management and Control Software, PLC Controllers, Micro Controllers, Motors/Actuators, Sensors and Safety) and how software is used for each level. Several types of robots (small autonomous robots, 6 DOF robot arms) are programmed using Python and ROS2. The use of feedback in robotic systems from sensor inputs is taught and students will use simple camera systems for robotic vision. Typically Offered: Fall and Spring.

Prereqs: CS 120 and CS 121 or by Instructor Permission

CS 360 Database Systems (4 credits)

Study of database design and implementation; comparison of basic models (entity-relationship, hierarchical, network, relational); study of query languages; discussion of issues of integrity, security, dependencies, and normal forms. Typically Offered: Fall and Spring.

Prereqs: CS 121 and CS 150

CS 383 Software Engineering (4 credits)

Current topics in development of software systems; software life cycle model, requirements definition, requirements analysis, software specification, software architectural design, engineering discipline in software development, software measurement, user interface design, legal and ethical issues in software product development. Projects are developed to demonstrate application of concepts. Typically Offered: Fall and Spring.

Prereqs: A grade of C or better in CS 240 and CS 270, and a grade of C or better in either CS 210 or CYB 220.

CS 385 Theory of Computation (3 credits)

Cross-listed with MATH 385

Mathematical models of computation, including finite automata and Turing machines. (Fall only)

Prereqs: Permission

CS 395 Analysis of Algorithms (3 credits)

Cross-listed with MATH 395

Measures of efficiency; standard methods and examples in the design, implementation, and analysis of algorithms. (Spring only)

Prereqs: MATH 175 and CS 121

CS 398 (s) Computer Science Cooperative Internship (1-3 credits, max 3)

Supervised internship in professional computer science settings, integrating academic study with work experience; requires formal plan of activities before co-op assignment and final written report evaluated by on-campus faculty members. Graded P/F.

Prereqs: Permission

CS 400 (s) Seminar (1-16 credits, max arranged)

Credit arranged. Technical topics, employment practices, interviewing, and current research topics. Graded P/F. One lecture a week. Typically Offered: Fall and Spring.

Prereqs: Senior standing in CS

CS 404 (s) Special Topics (1-16 credits)

Credit arranged

CS 411 Parallel Programming (3 credits)

Joint-listed with CS 511

Analysis, mapping, and the application of parallel programming software to high-performance systems; the principles of spatial- and temporal-locality of data memory hierarchies in performance tuning; architectural considerations in the design and implementation of a parallel program; the tradeoff between threaded (shared memory) and message-passing (distributed memory) programming styles and performance. Additional projects/assignments required for graduate credit. Recommended Preparation: Proficiency in programming using a modern language such as C or C++.

Prereqs: CS 395

CS 415 Computational Biology: Sequence Analysis (3 credits)

Joint-listed with CS 515

Design and analyze algorithms that address the computational problems posed by biological sequence data, such as DNA or protein sequences. Topics may include: comparing sequences (from genes to genomes), database searching, multiple sequence alignment, phylogenetic inferencing, gene discovery and annotation, and genome assembly. Additional class presentation and/or paper required for graduate credit.

Prereqs: Knowledge of high level programming language, basic probability theory, basic molecular biology, or Permission

CS 420 Data Communication Systems (3 credits)

Joint-listed with CS 520

Concept and terminology of data communications, equipment, protocols (including ISO/OSI and TCP/IP), architectures; transmission alternatives, regulatory issues and network management. Additional projects/ assignments required for graduate credit.

Prereqs: CS 150 and CS 240

CS 428 Multi-User Games and Virtual Environments (3 credits)

Joint-listed with CS 528

Software design and programming issues involved in constructing multi-user computer games and virtual environments, incorporating networking and 3D graphics. Additional projects and assignments required for graduate credit.

Prereqs: CS 210, CS 324, and CS 328

CS 431 (s) SFS Professional Development (3 credits)

Joint-listed with CS 531

This course is reserved for CyberCorps(R) Scholarship for Service program participants. Typically Offered: Fall and Spring.

Prereqs: Instructor Permission

CS 438 Network Security (3 credits)

Joint-listed with CS 538

Practical topics in network security; policy and mechanism, malicious code; intrusion detection, prevention, response; cryptographic techniques for privacy and integrity; emphasis on trade-offs between risk of misuse, cost of prevention, and societal issues; concepts implemented in programming assignments. Additional projects/assignments required for graduate credit. Recommended Preparation: Knowledge of C or C++. Cooperative: open to WSU degree-seeking students.

Prereqs: CS 336

CS 439 Applied Security Concepts (3 credits)

Joint-listed with CS 539

Hands-on approach to computer security with emphasis on developing practical knowledge of how cyber attacks work and how to defend against them. Detailed exploration of attacks such as buffer overruns, string attacks, worms, trojan horses, and denial-of-service attacks, and development of defenses against them. Additional work required for graduate credit. Recommended preparation: Good knowledge of C, operating system concepts and Unix.

Prereqs: CS 336 or Permission

CS 441 Advanced Operating Systems (3 credits)

Joint-listed with CS 541

Principles of contemporary operating systems for network and distributed computer systems; sequential processes, scheduling, process synchronization, device management, file systems, memory management, and protection and security. Additional work required for graduate credit. Typically Offered: Spring (Even Years).

Prereqs: CS 240

CS 443 Embedded Systems (3 credits)

Joint-listed with CS 543

Interfacing to an embedded system processor. Development of the processor's hardware-software interface. Application software development. Use of C and assembly language in device driver design, monitor-debugger, and real-time kernel. Regular laboratory assignments. Additional work required for graduate credit.

Prereqs: CS 150 or equivalent

CS 444 Supervisory Control and Critical Infrastructure Systems (3 credits)

Cross-listed with ECE 444

Joint-listed with CS 544, ECE 544

Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e. g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/ years.)

Prereqs: Senior or Graduate standing in the College of Engineering

CS 445 Compiler Design (4 credits)

Algorithms used by the following system software: assemblers, macro-processors, interpreters, and compilers; compiler design options and code optimization; all concepts implemented in major programming assignments.

Prereqs: CS 210 and CS 385

CS 447 Digital Forensics (3 credits)

Cross-listed with CYB 420

Joint-listed with CS 547, CYB 520

This course covers modern procedures, techniques, and best practices for digital forensic data acquisition, analysis, and case building. Covered topics and knowledge areas include (a) Applicable laws, policies, rules, procedures and best practices, and selected digital forensics techniques and tools (DFS); (b) Processes, techniques, tools, and best practices for static digital forensic data acquisition, analysis, and reporting from different host systems (HOF) and raw media (MEF). At the end of this course, students should have the knowledge, skills, and abilities to be able to appropriately prepare, perform, and record digital forensic investigation tasks on a selected set of media and hosts, of varied types. This including knowledge, skills, and abilities to: (1) Identify and describe applicable laws, policies, procedures, and static acquisition and analysis techniques and best practices for digital forensic investigations; (2) Identify the appropriate tools for a given forensic task on a given type of media, host, or image; and (3) Select and successfully use a variety of digital forensic tools for acquiring, analyzing, and recording case information. Hands-on and/or laboratory work is an essential component in this course. Significant additional work and performance required for graduate-level credit. Typically Offered: Fall.

Prereqs: CYB 310

CS 449 Fault-Tolerant Systems (3 credits)

Cross-listed with ECE 449

Joint-listed with CS 549

Design, modeling, analysis and integration of hardware and software to achieve dependable computing systems employing on-line fault tolerance; theory and fundamental concepts of designing reliable systems; analytical evaluation techniques, faults and advances in ultra-reliable distributed systems, fault-tolerant software systems; case studies include the space Shuttle, Airbus, and Boeing fly-by-wire primary flight computers as well as systems in reliable data bases and financial markets. Additional projects and assignments required for graduate credit.

Prereqs: CS 240 or Permission

CS 451 Advanced Computer Architecture (3 credits)

Cross-listed with ECE 441

Joint-listed with CS 551 and ECE 541

J Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.

Prereqs: CS 150, STAT 301 or Permission

CS 452 Real-Time Operating Systems (3 credits)

Joint-listed with CS 552

Topics of interest in the implementation of Real-Time Operating Systems, especially as applicable to embedded systems, including a relevant hardware review, interrupts and interrupt handling, real-time scheduling principles and implementation, latency, task management, shared data and synchronization, timers, message passing, tradeoffs between memory space and speed. Students will build a simple but relatively complete real-time operating system over the course of the semester. Additional projects and assignments required for graduate credit. (Spring only)

Prereqs: CS 240

CS 453 Robotic Systems Engineering I (3 credits)

Cross-listed with ME 459

Joint-listed with CS 553, ME 559

Topics to be covered include: principles of distributed systems control, interfacing and signal conditioning of sensors and actuators, data acquisition and signal processing, microprocessor-based control, physical modeling, and hardware and software simulation for model validation and control. Typically Offered: Fall and Spring.

Prereqs: Instructor Permission

CS 454 Robotic Systems Engineering II (3 credits)

Joint-listed with CS 554

Topics to be covered include: simulation of mixed environment robotic systems for model validation and control, interfacing and signal conditioning of sensors and actuators, and data acquisition and signal processing. Software architectures utilizing the ROS (Robotic Operating System) will be implemented and demonstrated on the appropriate physical robots and for associated remote computer-based sensors during the course. Typically Offered: Fall and Spring.

Prereqs: Instructor permission

CS 455 Machine Vision (3 credits)

This course will teach students state-of-the-art practices, tools and methodologies to the process of generating a symbolic description of a given environment from an image. Lectures will describe the mathematics of image formation, motion vision, recovering and geolocating shapes within images. Use of local processing power and use of cloud based algorithms will be implemented. Applications for robotics, autonomous vehicles and machine interaction are discussed. Completion of MATH 330 is strongly recommended. Typically Offered: Fall.

Prereqs: Instructor Permission

CS 460 Database Management Systems Design (3 credits)

Joint-listed with CS 560

Theory, analysis and implementation of database architecture, security, performance, query optimization, recovery and concurrency control, reliability, integrity, commit protocols, distributed processing, deadlock detection and management. Additional projects/assignments required for graduate credits.

Prereqs: CS 360

CS 466 PLC Programming for Automation (3 credits)

Joint-listed with CS 566

This course covers the theory and practice of utilizing Programmable Logic Controllers used in industrial automation. It will provide background in Boolean logic and its application in combinational and sequential logic. The course will then go over analog and digital input/output such as light sensors, switches, motors, relays, pulse-width modulation, encoders and how they relate to PLCs. Computer networking and the Modbus communications protocol and security issues will be examined. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

Prereqs: None.

CS 470 Artificial Intelligence (3 credits)

Joint-listed with CS 570

Concepts and techniques involved in artificial intelligence, Lisp, goal-directed searching, history trees, inductive and deductive reasoning, natural language processing, and learning. Extra term paper required for graduate credit.

Prereqs: CS 210

CS 472 Evolutionary Computation (3 credits)

Joint-listed with CS 572

Solving computation problems by "growing" solutions; simulates natural evolution using analogues of mutation, crossover, and other generic transformations on representations of potential solutions; standard EC techniques such as genetic algorithms and evolutionary programming, mathematical explanations of why they work, and a survey of some applications; the focus is on solving real-world problems using projects. Graduate-level research and possible paper or presentation required for graduate credit.

Prereqs: CS 210

CS 474 Deep Learning (3 credits)

Joint-listed with CS 574

Deep Learning is enabling many rapid technological advances across multiple science disciplines, from automated speech recognition through medical image analysis and to autonomous robots and vehicles. This course will cover Deep Learning topics on gradient decent (GD), cross-validation, regularization, deep feedforward neural networks (NNs), convolutional NNs (CNNs), recurrent NNs (RNNs), deep architectures, transfer learning, and multitask learning. In this course students will learn to: understand and describe concepts and implementations of: deep forward networks, regularization, CNNs, RNNs, and transfer learning; apply CNNs and RNNs for modeling, analyzing, and solving real-world problems; select and apply adequate or best-fit toolboxes to train, tune, and test a deep neural network. Students will also gain an ability to successfully communicate, collaborate, and lead within a project group setting. Additional work required for graduate credit.

Prereqs: (CS 121 or MATH 330) and STAT 301**CS 475 Machine Learning (3 credits)**

Joint-listed with CS 575

Analysis and implementation of classic machine learning algorithms including neural networks, deep learning networks, principle component analysis, decision trees, support vector machines, clustering, reinforcement learning, ensemble learning, K-means, self-organizing maps and probabilistic learning such as Markov Chain Monte Carlo and Expectation Maximization algorithms. Techniques of pre-processing data, training, testing, and validating will be discussed along with statistical measures commonly used and pitfalls commonly encountered. Additional work required for graduate credit.

Prereqs: CS 210**CS 477 Python for Machine Learning (3 credits)**

Joint-listed with CS 577

Python is widely used for Machine Learning and Data Science. This course introduces students to current approaches and techniques for finding solutions to Data Science problems using Machine Learning with Python. Topics include: classification, regression, clustering, ensemble learning, and deep learning. The course offers hands-on experiences with Machine Learning techniques using Python-based libraries and also modern tools used by computer and data scientists such as Jupyter Notebook. In this course students will learn: an ability to understand and describe the fundamental concepts and techniques of Machine Learning and their Python-based implementations; an ability to design, implement, and evaluate Python-based Machine Learning solutions for problems such as data classification and clustering. Students will also develop leadership and teamwork abilities through group discussions and projects. Additional work required for graduate credit.

Prereqs: (CS 121 or MATH 330) and STAT 301**CS 479 Data Science (3 credits)**

Joint-listed with CS 579

Data science is advancing the conduct of science in individual and collaborative works. Data science combines aspects of data management, library science, computer science, and physical science using supporting cyberinfrastructure and information technology. Key methodologies in application areas based on real research experience are taught to build a skill-set that enables students to handle each stage in a data life cycle, from data collection, analysis, archiving, to data discovery, access and reuse. Additional work required for graduate credit.

Prereqs: MATH 330 or Permission**CS 480 CS Senior Capstone Design I (3 credits)**

Capstone design sequence for computer science majors. Formal development techniques applied to definition, design, coding, testing, and documentation of a large software project. Projects are customer-specified, includes real-world design constraints, and usually encompasses two semesters. Students work in teams. Significant lab work required.

Prereqs: CS 383, ENGL 317, and Senior standing**CS 481 CS Senior Capstone Design II (3 credits)**

General Education: Senior Experience

Continuation of CS 480. Application of formal design techniques to development of a large computer science project performed by students working in teams. Significant lab work required.

Prereqs: CS 480**CS 487 Adversarial Machine Learning (3 credits)**

Joint-listed with CS 587

The course introduces students to adversarial attacks and defenses against machine learning models. The particular focus is on adversarial examples in deep learning models, due to their prevalence in modern machine learning applications. Covered topics include evasion attacks against white-box and black-box machine learning models, data poisoning attacks, privacy attacks, defense strategies against common adversarial attacks, generative adversarial networks, and robust machine learning models. The course also provides an overview of adversarial attacks against machine learning models used in cybersecurity applications. Additional work is required for graduate credit. Typically Offered: Spring.

Prereqs: Instructor Permission Required**CS 489 Semantic Web and Open Data (3 credits)**

Joint-listed with CS 589

The Semantic Web extends the core principles of the World Wide Web to make the meaning of data machine-readable. This course covers the technological framework and associated functionalities enabled by the Semantic Web and Linked Open Data that provide a space for large scale data integration, reasoning and analysis. In this course students will learn: an ability to understand and describe the fundamental concepts in Semantic Web, such as ontology, RDF, OWL, logic reasoning, ontology engineering, knowledge graph, Linked Data, SPARQL, Open Data, as well as the inter-relationships among those concepts; an ability to design and implement domain-specific solutions for Big Data problems using concepts such as ontology engineering, data querying, analysis, and transformation, and output generation; an ability to describe and apply ethical concepts such as privacy, intellectual property, and responsibility as they relate to data analysis and the Semantic Web. Students will also develop leadership and teamwork abilities through group projects. Additional work required for graduate credit.

Prereqs: CS 360 or CS 479 or CS 579**CS 499 (s) Directed Study (1-16 credits)**

Credit arranged

CS 500 Master's Research and Thesis (1-16 credits)

Credit arranged

CS 501 (s) Seminar (1-16 credits)

Credit arranged

CS 502 (s) Directed Study (1-16 credits)

Credit arranged

CS 504 (s) Special Topics (1-16 credits)

Credit arranged

CS 505 (s) Professional Development (1-16 credits)

Credit arranged

CS 507 Computer Science and Cyber Research Methods (3 credits)

Cross-listed with CYB 507

This course introduces graduate students to approaches, methods, techniques, tools, and legal and ethical rules and regulations for planning, designing, performing, evaluating, and reporting computer science and cybersecurity research and results. In this course, students should gain the needed knowledge and skills to be able to: (1) Identify appropriate publication venues and adequately perform related literature searches; (2) Critically read and interpret related research questions, methods, experiments, and results; (3) Develop a scientific research question; (4) Develop a research plan with corresponding research hypothesis and hypothesis testing experiments; (5) Analyze research experiment results; (6) Present research and results to a variety of audiences in written and oral form; (7) Identify applicable laws, such as human subjects research and conflicts of interest regulations, and ethical and non-ethical behaviors in the conduct of research.

Prereqs: Graduate standing or instructor permission**CS 510 Programming Language Theory (3 credits)**

Advanced topics in programming language theory including formal syntax, formal semantics, denotational semantics, and type theory; principles of programming language design are stressed; not a comparative language class. Cooperative: open to WSU degree-seeking students.

Coreqs: CS 385 or equivalent**CS 511 Parallel Programming (3 credits)**

Joint-listed with CS 411

Analysis, mapping, and the application of parallel programming software to high-performance systems; the principles of spatial- and temporal-locality of data memory hierarchies in performance tuning; architectural considerations in the design and implementation of a parallel program; the tradeoff between threaded (shared memory) and message-passing (distributed memory) programming styles and performance. Additional projects/assignments required for graduate credit. Recommended Preparation: Proficiency in programming using a modern language such as C or C++.

Prereqs: CS 395**CS 515 Computational Biology: Sequence Analysis (3 credits)**

Joint-listed with CS 415

Design and analyze algorithms that address the computational problems posed by biological sequence data, such as DNA or protein sequences. Topics may include: comparing sequences (from genes to genomes), database searching, multiple sequence alignment, phylogenetic inferencing, gene discovery and annotation, and genome assembly. Additional class presentation and/or paper required for graduate credit.

Prereqs: Knowledge of high level programming language, basic probability theory, basic molecular biology; or Permission**CS 520 Data Communication Systems (3 credits)**

Joint-listed with CS 420

Concept and terminology of data communications, equipment, protocols (including ISO/OSI and TCP/IP), architectures; transmission alternatives, regulatory issues and network management. Additional projects/assignments required for graduate credit.

Prereqs: CS 150 and CS 240**CS 528 Multi-User Games and Virtual Environments (3 credits)**

Joint-listed with CS 428

Software design and programming issues involved in constructing multi-user computer games and virtual environments, incorporating networking and 3D graphics. Additional projects and assignments required for graduate credit.

Prereqs: CS 210, CS 324, and CS 328**CS 531 (s) SFS Professional Development (3 credits, max 99)**

Joint-listed with CS 431

This course is reserved for CyberCorps(R) Scholarship for Service program participants. Typically Offered: Fall and Spring.

CS 536 Advanced Information Assurance Concepts (3 credits)

Cross-listed with CYB 536

This course covers theory, approaches, techniques, and best practices for (a) Secure and resilient system and network architectures (IAA); (b) Cybersecurity compliance (IAC); (c) Cybersecurity standards (IAS); and (d) Security risk analysis (SRA). At the end of this course, given examples of cyber system models and scenarios, architectures, and implementations of different types and of varied complexity, students should have the knowledge, skills, and abilities to be able to: (1) Understand organizational and/or cyber-system requirements, architecture, design, and implementation; (2) Describe and analyze the system with appropriate detail; (3) Develop a threat model; (4) Identify potential vulnerabilities; (5) Identify appropriate risk analysis processes and standards; (6) Perform risk analysis and assessment; (7) Identify, evaluate, design, apply, and document security and resiliency enhancements and risk removal or mitigation approaches, tasks, and security controls. Such approaches, tasks, and controls including a combination of the following types: organizational, policy, technical, human factors, processes, protocols, techniques, and documents as appropriate.

Prereqs: Graduate standing and instructor permission**CS 538 Network Security (3 credits)**

Joint-listed with CS 438

Practical topics in network security; policy and mechanism, malicious code; intrusion detection, prevention, response; cryptographic techniques for privacy and integrity; emphasis on trade-offs between risk of misuse, cost of prevention, and societal issues; concepts implemented in programming assignments. Additional projects/assignments required for graduate credit. Recommended Preparation: Knowledge of C or C++. CS 438 is cooperative: open to WSU degree-seeking students.

Prereqs: CS 336**CS 539 Applied Security Concepts (3 credits)**

Joint-listed with CS 439

Hands-on approach to computer security with emphasis on developing practical knowledge of how cyber attacks work and how to defend against them. Detailed exploration of attacks such as buffer overruns, string attacks, worms, trojan horses, and denial-of-service attacks, and development of defenses against them. Additional work required for graduate credit. Recommended preparation: Good knowledge of C, operating system concepts and Unix.

Prereqs: CS 336 or Permission**CS 541 Advanced Operating Systems (3 credits)**

Joint-listed with CS 441

Principles of contemporary operating systems for network and distributed computer systems; sequential processes, scheduling, process synchronization, device management, file systems, memory management, and protection and security. Additional work required for graduate credit. Typically Offered: Spring (Even Years).

Prereqs: CS 240

CS 543 Embedded Systems (3 credits)

Joint-listed with CS 443

Interfacing to an embedded system processor. Development of the processor's hardware-software interface. Application software development. Use of C and assembly language in device driver design, monitor-debugger, and real-time kernel. Regular laboratory assignments. Additional work required for graduate credit.

Prereqs: CS 150 or equivalent

CS 544 Supervisory Control and Critical Infrastructure Systems (3 credits)

Cross-listed with ECE 544

Joint-listed with CS 444, ECE 444

Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e. g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/ years.)

CS 547 Digital Forensics (3 credits)

Cross-listed with CYB 520

Joint-listed with CS 447, CYB 420

This course covers modern procedures, techniques, and best practices for digital forensic data acquisition, analysis, and case building. Covered topics and knowledge areas include (a) Applicable laws, policies, rules, procedures and best practices, and selected digital forensics techniques and tools (DFS); (b) Processes, techniques, tools, and best practices for static digital forensic data acquisition, analysis, and reporting from different host systems (HOF) and raw media (MEF). At the end of this course, students should have the knowledge, skills, and abilities to be able to appropriately prepare, perform, and record digital forensic investigation tasks on a selected set of media and hosts, of varied types. This including knowledge, skills, and abilities to: (1) Identify and describe applicable laws, policies, procedures, and static acquisition and analysis techniques and best practices for digital forensic investigations; (2) Identify the appropriate tools for a given forensic task on a given type of media, host, or image; and (3) Select and successfully use a variety of digital forensic tools for acquiring, analyzing, and recording case information. Hands-on and/or laboratory work is an essential component in this course. Significant additional work and performance required for graduate-level credit. Typically Offered: Fall.

CS 549 Fault/Tolerant Systems (3 credits)

Joint-listed with CS 449 and ECE 449

Design, modeling, analysis and integration of hardware and software to achieve dependable computing systems employing on-line fault tolerance; theory and fundamental concepts of designing reliable systems; analytical evaluation techniques, faults and advances in ultra-reliable distributed systems, fault-tolerant software systems; case studies include the space Shuttle, Airbus, and Boeing fly-by-wire primary flight computers as well as systems in reliable data bases and financial markets. Additional projects and assignments required for graduate credit.

Prereqs: CS 240 or Permission

CS 551 Advanced Computer Architecture (3 credits)

Cross-listed with ECE 541

Joint-listed with CS 451 and ECE 441

Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.

Prereqs: CS 150, STAT 301 or Permission

CS 552 Real Time Operating Systems (3 credits)

Joint-listed with CS 452

Topics of interest in the implementation of Real-Time Operating Systems, especially as applicable to embedded systems, including a relevant hardware review, interrupts and interrupt handling, real-time scheduling principles and implementation, latency, task management, shared data and synchronization, timers, message passing, trade-offs between memory space and speed. Students will build a simple but relatively complete real-time operating system over the course of the semester. Additional projects and assignments are required for graduate credit. (Spring only)

Prereqs: CS 240

CS 553 Robotic Systems Engineering I (3 credits)

Cross-listed with ME 559

Joint-listed with CS 453, ME 459

Topics to be covered include: principles of distributed systems control, interfacing and signal conditioning of sensors and actuators, data acquisition and signal processing, microprocessor-based control, physical modeling, and hardware and software simulation for model validation and control. Typically Offered: Fall and Spring.

CS 554 Robotic Systems Engineering II (3 credits)

Joint-listed with CS 454

Topics to be covered include: simulation of mixed environment robotic systems for model validation and control, interfacing and signal conditioning of sensors and actuators, and data acquisition and signal processing. Software architectures utilizing the ROS (Robotic Operating System) will be implemented and demonstrated on the appropriate physical robots and for associated remote computer-based sensors during the course. Typically Offered: Fall and Spring.

CS 555 Machine Vision (3 credits)

This course will teach students state-of-the-art practices, tools and methodologies to the process of generating a symbolic description of a given environment from an image. Lectures will describe the mathematics of image formation, motion vision, recovering and geolocating shapes within images. Use of local processing power and use of cloud based algorithms will be implemented. Applications for robotics, autonomous vehicles and machine interaction are discussed. Completion of MATH 330 is strongly recommended. Typically Offered: Fall.

Prereqs: Instructor Permission

CS 560 Database Management Systems Design (3 credits)

Joint-listed with CS 460

Theory, analysis and implementation of database architecture, security, performance, query optimization, recovery and concurrency control, reliability, integrity, commit protocols, distributed processing, deadlock detection and management. Additional projects/assignments required for graduate credit.

Prereqs: CS 360

CS 566 PLC Programming for Automation (3 credits)

Joint-listed with CS 466

This course covers the theory and practice of utilizing Programmable Logic Controllers used in industrial automation. It will provide background in Boolean logic and its application in combinational and sequential logic. The course will then go over analog and digital input/output such as light sensors, switches, motors, relays, pulse-width modulation, encoders and how they relate to PLCs. Computer networking and the Modbus communications protocol and security issues will be examined. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

Prereqs: None.**CS 570 Artificial Intelligence (3 credits)**

Joint-listed with CS 470

Concepts and techniques involved in artificial intelligence, Lisp, goal-directed searching, history trees, inductive and deductive reasoning, natural language processing, and learning. Extra term paper required for graduate credit.

Prereqs: CS 210**CS 572 Evolutionary Computation (3 credits)**

Joint-listed with CS 472

Solving computation problems by "growing" solutions; simulates natural evolution using analogues of mutation, crossover, and other generic transformations on representations of potential solutions; standard EC techniques such as genetic algorithms and evolutionary programming, mathematical explanations of why they work, and a survey of some applications; the focus is on solving real-world problems using projects. Graduate-level research and possible paper or presentation required for graduate credit.

Prereqs: CS 210**CS 574 Deep Learning (3 credits)**

Joint-listed with CS 474

Deep Learning is enabling many rapid technological advances across multiple science disciplines, from automated speech recognition through medical image analysis and to autonomous robots and vehicles. This course will cover Deep Learning topics on gradient decent (GD), cross-validation, regularization, deep feedforward neural networks (NNs), convolutional NNs (CNNs), recurrent NNs (RNNs), deep architectures, transfer learning, and multitask learning. In this course students will learn to: understand and describe concepts and implementations of: deep forward networks, regularization, CNNs, RNNs, and transfer learning; apply CNNs and RNNs for modeling, analyzing, and solving real-world problems; select and apply adequate or best-fit toolboxes to train, tune, and test a deep neural network. Students will also gain an ability to successfully communicate, collaborate, and lead within a project group setting. Additional work required for graduate credit.

Prereqs: (CS 121 or MATH 330) and STAT 301**CS 575 Machine Learning (3 credits)**

Joint-listed with CS 475

Analysis and implementation of classic machine learning algorithms including neural networks, deep learning networks, principle component analysis, decision trees, support vector machines, clustering, reinforcement learning, ensemble learning, K-means, self-organizing maps and probabilistic learning such as Markov Chain Monte Carlo and Expectation Maximization algorithms. Techniques of preprocessing data, training, testing, and validating will be discussed along with statistical measures commonly used and pitfalls commonly encountered. Additional work required for graduate credit.

Prereqs: CS 210**CS 577 Python for Machine Learning (3 credits)**

Joint-listed with CS 477

Python is widely used for Machine Learning and Data Science. This course introduces students to current approaches and techniques for finding solutions to Data Science problems using Machine Learning with Python. Topics include: classification, regression, clustering, ensemble learning, and deep learning. The course offers hands-on experiences with Machine Learning techniques using Python-based libraries and also modern tools used by computer and data scientists such as Jupyter Notebook. In this course students will learn: an ability to understand and describe the fundamental concepts and techniques of Machine Learning and their Python-based implementations; an ability to design, implement, and evaluate Python-based Machine Learning solutions for problems such as data classification and clustering. Students will also develop leadership and teamwork abilities through group discussions and projects. Additional work required for graduate credit.

Prereqs: (CS 121 or MATH 330) and STAT 301**CS 578 Neural Network Design (3 credits)**

Introduction to neural networks and problems that can be solved by their application; introduction of basic neural network architectures; learning rules are developed for training these architectures to perform useful functions; various training techniques employing the learning rules discussed and applied; neural networks used to solve pattern recognition and control system problems.

Prereqs: Permission**CS 579 Data Science (3 credits)**

Joint-listed with CS 479

Data science is advancing the conduct of science in individual and collaborative works. Data science combines aspects of data management, library science, computer science, and physical science using supporting cyber-infrastructure and information technology. Key methodologies in application areas based on real research experience are taught to build a skill-set that enables students to handle each stage in a data life cycle, from data collection, analysis, archiving, to data discovery, access and reuse. Additional work required for graduate credit.

Prereqs: MATH 330 or Permission**CS 580 Graduate Project (1-6 credits, max 6)**

Application of formal design and documentation techniques to the development of computer programming project; project selected in consultation with student's major professor.

Prereqs: CS 383, CS 480 or Permission**CS 587 Adversarial Machine Learning (3 credits)**

Joint-listed with CS 487

The course introduces students to adversarial attacks and defenses against machine learning models. The particular focus is on adversarial examples in deep learning models, due to their prevalence in modern machine learning applications. Covered topics include evasion attacks against white-box and black-box machine learning models, data poisoning attacks, privacy attacks, defense strategies against common adversarial attacks, generative adversarial networks, and robust machine learning models. The course also provides an overview of adversarial attacks against machine learning models used in cybersecurity applications. Additional work is required for graduate credit. Typically Offered: Spring.

CS 589 Semantic Web and Open Data (3 credits)

Joint-listed with CS 489

The Semantic Web extends the core principles of the World Wide Web to make the meaning of data machine-readable. This course covers the technological framework and associated functionalities enabled by the Semantic Web and Linked Open Data that provide a space for large scale data integration, reasoning and analysis. In this course students will learn: an ability to understand and describe the fundamental concepts in Semantic Web, such as ontology, RDF, OWL, logic reasoning, ontology engineering, knowledge graph, Linked Data, SPARQL, Open Data, as well as the inter-relationships among those concepts; an ability to design and implement domain-specific solutions for Big Data problems using concepts such as ontology engineering, data querying, analysis, and transformation, and output generation; an ability to describe and apply ethical concepts such as privacy, intellectual property, and responsibility as they relate to data analysis and the Semantic Web. Students will also develop leadership and teamwork abilities through group projects. Additional work required for graduate credit.

Prereqs: CS 360 or CS 479 or CS 579

CS 598 (s) Internship (1-16 credits)

Credit arranged

CS 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation. There is a limit on the number of credits in 599 that can be included on a study plan.

Prereqs: Permission

CS 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Core Science (CORS)

CORS 217 Exploring the Solar System (3 credits)

General Education: Natural/Integrated Science

An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

CORS 231 Fish and Wildlife in a Changing World (3 credits)

General Education: Natural/Integrated Science

An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

CORS 232 (s) Science on Your Plate: Food Safety, Risks and Technology (3 credits)

General Education: American Diversity, Natural/Integrated Science

Cross-listed with FS 201

An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

CORS 234 The Science of Engineering and Technology in the Modern World (3 credits)

General Education: Natural/Integrated Science

An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

CORS 236 Science for Non-Scientists (3 credits)

General Education: Natural/Integrated Science

An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

CORS 237 Earth Science in the Movies (3 credits)

General Education: Natural/Integrated Science

Hollywood disaster movies are endlessly fun to watch but notorious at getting the facts wrong. This leads to poor public understanding of how science gets done and how the Earth works. This course is a science class for undergraduates that provides an introduction to earth, atmospheric, and planetary sciences based on popular (and not so popular) natural disaster movies. Topics include earthquakes, tsunamis, volcanoes, tornados, climate change, asteroid impacts, evolution, and extinction. The course focuses on the scientific processes and natural hazards introduced in the films and how their depictions compare to reality, why such hazards occur, and the real danger they pose. We will also discuss the history of the science and debate around these topics and how certain perspectives get incorporated into popular culture. Typically Offered: Spring (Odd Years).

CORS 254 Our National Parks (3 credits)

General Education: Natural/Integrated Science

General Education: Natural/Integrated Science. Learn dynamic earth processes and spectacular geologic occurrences that have shaped our special National Parks in North America. Learn some of the history, species present, and early inhabitants of these landscapes. Optional: 9-day field trip to several National Parks. Typically Offered: Spring (Odd Years). Cooperative: open to WSU degree-seeking students.

CORS 255 Concepts In Human Nutrition (3 credits)

General Education: Natural/Integrated Science
 CORS 205-297 Integrated Science () Gen Ed: Natural and Applied Sciences, American Diversity An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

Criminology (CRIM)

CRIM 101 Introduction to Criminology (3 credits)

General Education: Social and Behavioral Ways of Knowing
 This course provides a general introduction to the study of crime, deviance, and crime control. Course material will cover crime measurement, patterns, and trends as well as major theoretical explanations for crime. Criminal justice institutions such as police, courts, and corrections will be considered along with specific topics as they relate to criminology. These topics include social deviance, violence, white collar crime, terrorism, vice, drug use, organized crime, mental health issues, racial inequalities, women and crime, and the depiction of crime in popular media and culture. Specific crime control policies are also considered. Typically Offered: Fall, Spring and Summer.

CRIM 201 Justice Institutions (3 credits)

An introduction to the history, processes, practices, and functions of the justice system in the United States. The course focuses primarily on policing, courts, and corrections. Typically Offered: Spring.

CRIM 204 (s) Special Topics (1-16 credits)

Credit arranged

CRIM 301 Criminological Theory (3 credits)

Review and assessment of common explanations of crime, deviant behavior, and control. May include field trips.

Prereqs: CRIM 101

CRIM 302 Research Methods in Criminology (3 credits)

This course will prepare students to conduct criminological research using a range of social science methods. The course is divided into four sections. In the first section, the class will explore the logic and process of social scientific research, with a focus on the connection between theory and methods, strategies of research design, the ethical responsibilities of researchers, and issues in sampling and measurement. The second section of the course examines some of the common data gathering techniques used by criminologists, such as experimental research, survey design, policy analysis, evaluation research, secondary analysis, crime mapping, and network analysis. The third section of the course examines the logic of qualitative research methods, including focus groups, interviewing, and ethnography. In the final section of the course, students use social science data to examine key strategies and techniques in quantitative data management and analysis. Typically Offered: Varies.

Prereqs: CRIM 101

Coreqs: None

CRIM 320 Deviant Behavior (3 credits)

This course is a critical examination of the relationship between deviance and social control. It will investigate how and why certain forms of behavior come to be known as deviant, analyze the nature of formal and informal responses to deviance, and explain the interaction of different social control institutions. Specific topics may include corruption, drug use, prostitution, criminal violence, gangs, corporate crime, and heroic deviance. Typically Offered: Spring.

Prereqs: CRIM 101 or SOC 101

CRIM 325 Family Violence (3 credits)

This course provides a broad multidisciplinary look at the topic of family violence, which brings in both qualitative and quantitative research from the fields of criminology, sociology, and psychology. It covers the history of family violence and its gradual emergence as a social problem, current theories and research methods used to explain and study family violence, the different types of family violence, the structural and cultural antecedents of family violence, and the intervention/prevention strategies used to address and stop family violence. Typically Offered: Fall.

Prereqs: CRIM 101

CRIM 329 Homicide (3 credits)

This course provides an analysis of the dynamics and processes associated with various types of homicides, as well as the theoretical explanations of homicide. Topics may include familial homicide, serial homicide, homicide associated with cults, and gang-related homicide, among others. Issues related to criminal justice processing of offenders are also discussed. Typically Offered: Varies.

Prereqs: CRIM 101.

CRIM 330 Juvenile Delinquency (3 credits)

This course surveys the topic of juvenile delinquency. It covers the historical emergence of juvenile delinquency as a social problem and how it differs from adult crime, the research methods and data used to track patterns and trends in juvenile delinquency, the theoretical mechanisms and social contexts that help us understand the prevalence of delinquency, and an in-depth examination of the juvenile justice system. Typically Offered: Fall.

Prereqs: CRIM 101

CRIM 332 Punishment and Corrections (3 credits)

This course will provide an introduction to the study of punishment and corrections. The course will explore a range of issues, such as the social history of criminal punishment, patterns in imprisonment, inmate subculture, private prisons, and contemporary correctional policies and practices. Throughout the course, attention will be devoted to how policy decisions about punishment and corrections affect local communities. May include field trips. Typically Offered: Spring.

Prereqs: CRIM 101

CRIM 333 Elite and White Collar Crime (3 credits)

The costs, causes, and control of crime by and against businesses and other organizations; the relationship between trust and white collar crime; the impact of the media in shaping perceptions of white collar crime. Typically Offered: Spring (Even Years).

CRIM 334 Policing (3 credits)

This course approaches the study of the police in the United States and abroad from a criminological perspective. Particular attention will be paid to municipal policing and will examine its history, its organizational structure and subculture, its evolving roles within the urban environment, and its relationship to changing patterns in crime rates. The course will also examine substantive problems in policing, including use of force, police misconduct, and the difficulties associated with bringing about organizational reform. Typically Offered: Fall.

CRIM 335 Terrorism & Counterterrorism (3 credits)

This course focuses on trends, tactics, issues, and contexts facilitating extremist behaviors in the United States and around the world. The course also examines counterterrorism and political and social responses to extremism. Typically Offered: Varies.

CRIM 336 Comparative Criminal Justice Systems (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Gen Ed: Social Science, International Comparative study of justice systems in selected foreign countries. (Alt/years)

Prereqs: SOC 101

CRIM 337 Violent Crime (3 credits)

Explores the sources and types of violence, victims of violence, impact of firearms on violence, responses to violence by intergovernmental, national criminal justice systems, and non-state actors, and ways to reduce violence in society. Typically Offered: Spring and Spring (Odd Years).

Prereqs: CRIM 101 or Instructor Permission

CRIM 338 Vice Crime (3 credits)

This course explores the intersection of morality, law, and criminal justice through the examination of "vice" crime, such as illegal drug use, gambling, and sex work. The goal of the class is to explore the socially constructed nature of vice and examine the different socio-legal strategies that have been mobilized to control vice, such as criminalization, decriminalization, regulation, and harm reduction. Typically Offered: Spring.

Prereqs: CRIM 101

CRIM 339 Crime and the Media (3 credits)

Cross-listed with JAMM 339

Critical evaluation of the media portrayals of crime and the criminal justice system; analysis of how the media help to shape public understanding and public policy.

CRIM 340 Sex Crimes (3 credits)

This course explores various aspects of sexual crimes, offenders, and deviance. Topics may include, but are not limited to, historical and current perspectives of sex offender legislation, victimization issues, theoretical explanations, and processing offenders in the criminal justice system. Special focus will be placed on sexual offenses and sexual deviance in various locations and settings.

Prereqs: CRIM 101

CRIM 344 Criminology and Video Games (3 credits)

This course takes a criminological approach to the study of video games and gaming. Topics may include crime typologies, depictions of and implications of violence, and representation of criminal justice agencies such as law enforcement and corrections. Demographic representations, such as gender, sexual orientation, race, ethnicity, and age in games and gaming environments are also explored as they relate to issues such as gamer identities and representations in gaming spaces. Other current issues may also be covered. Typically Offered: Varies.

CRIM 404 (s) Special Topic (1-16 credits)

Credit arranged

CRIM 415 Citizen's Police Academy (3 credits)

Offered only in the spring term, students are acquainted with the activities of a local police department in a community-learning style course. This experience is an opportunity for applied learning in the field. Limited space available. Instructor permission required. Graded Pass/Fail. Graded Pass/Fail. Typically Offered: Spring.

CRIM 420 Substance Use and Crime (3 credits)

This course covers substance use from a criminological perspective. First, the course covers the definitions, patterns, and trends of substance use as well as the methods and data employed in substance use research. Second, the course covers the social and pharmacological nature of different types of substances and the prevalence and consequences of their use. Lastly, the course covers the criminological implications of substance use, including the theories of why people use, theories explaining why use leads to violent crime, the drug trade, the successes and failures of various drug control strategies, and a discussion of alternatives to conventional drug control such as legalization and decriminalization. Typically Offered: Spring.

CRIM 421 Gender and Crime (3 credits)

This course uses sociological and criminological theories to explore the relationship between gender and crime. Topics explore adult and juvenile females and their entry into the criminal justice system as victims and offenders. The course examines the challenges faced by females working in criminal justice (policing, courts, and corrections). Gender is also discussed by considering issues faced by the LGBT community in terms of how particular behaviors are criminalized, how LGBT individuals are treated within and by the criminal justice system. Typically Offered: Varies.

Prereqs: SOC 101 or CRIM 101.

CRIM 435 Psychopathy and Crime (3 credits)

This course provides a general introduction to psychopathy. Emphasis is placed on the perceptions, misconceptions, and the realities of the relationship between psychopathy and crime. In addition, the course explores the historical development of psychopathy, key diagnostic criteria, and the biological and psychological correlates of the disorder.

Prereqs: CRIM 101

CRIM 436 Mental Health and Crime (3 credits)

This course examines the historical and contemporary relationships between mental health and criminal/deviant behavior. Emphasis is placed on the criminalization of mental illness, the reciprocal influence between mental health and criminal offending, and the role of clinical diagnoses in the criminal justice system.

Prereqs: CRIM 101

CRIM 439 Inequalities in the Justice System (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

Critical focus on the issues of race, class, and gender and their consequences for the operation of the justice system; the role of the justice system in the history and experience of various minorities, theories of minority crime, and issues of selective enforcement, sentencing disparity, and disproportionate incarceration; the role of gender considered through the examination of offenders, victims, and criminal justice professionals. Typically Offered: Spring.

Prereqs: CRIM 101

CRIM 461 Capstone: Justice Policy Issues (3 credits)

General Education: Senior Experience

This course offers a critical analysis of contemporary criminal justice policies and practices in the United States. The course emphasizes a hands-on approach; through structured debates, critical case study analysis, and research projects, students explore the inner workings of the criminal justice system and its many strengths and weaknesses.

Typically Offered: Varies.

Prereqs: CRIM 101 and CRIM 301

CRIM 462 (s) Senior Practicum (3 credits)

General Education: Senior Experience

This capstone course allows advanced criminology students to complete a practicum with an organization or agency as they approach the end of their academic program. The practicum allows students to integrate and apply their criminological knowledge and training in "real world" settings, and the course culminates in the production of a large capstone project. The range of possible practicum sites will vary according to the intellectual and career interests of the students but may include criminal justice agencies, non-profit organizations, social service providers, or local research organizations. Typically Offered: Varies.

Prereqs: Instructor Permission

CRIM 464 Criminology Abroad (3 credits)

General Education: Senior Experience

Criminology Abroad combines a 10-day intensive study abroad experience (typically a faculty-led trip over spring break), along with instruction in comparative criminology. Besides an experience abroad, a student completes a directed research project related to criminology in the visited country.

Prereqs: SOC 101

CRIM 466 Inside Out (3-6 credits, max arranged)

Inside Out is a prison exchange class that takes place within a correctional institution in Idaho. The course focuses on a variety of topics ranging from philosophical perspectives of justice to historical perceptions of biology and crime. The class includes both university and incarcerated students and emphasizes peer learning and collaboration.

Prereqs: CRIM 101 or SOC 101; Instructor Permission required

CRIM 498 (s) Internship (1-6 credits)

Supervised professional field experience in a criminology-related organization.

CRIM 499 (s) Directed Study (1-16 credits)

Intended to accommodate a wide variety of criminological topics.

Prereqs: Criminology Major

CRIM 506 Advanced Criminological Theory (3 credits)

This course provides a detailed summary of the development of criminological thought throughout the ages. Students will explore the evolving nature of criminological theorizing over time, beginning with Greek Antiquity, progressing through the Middle Ages, the Age of Reason, the Scientific Revolution, and ending with present day. Students will critically assess theoretical constructs and assumptions, identifying and challenging their strengths and weaknesses. In addition, students will examine the relationship between theory and policy, reflecting on the role that theory plays in historical and contemporary criminal justice systems in Western nations. Typically Offered: Fall.

CRIM 507 Justice Institutions (3 credits)

This course will offer an examination of the criminal justice system in the United States. In the first part of the course, students will examine the history and organization of criminal justice in the United States and analyze the key differences between the U. S. and other countries. The second part of the course will explore the most pressing issues and trends in policing, courts, and corrections. While the topics covered will vary from year-to-year, they may include issues such as police use of deadly force, race/ethnicity and sentencing outcomes, alternatives to incarceration, capital punishment, mental health and prisons, and prisoner re-entry. Typically Offered: Spring.

CRIM 511 Data Analysis in Criminology (3 credits)

This course covers research design, data collection, and data analysis using a hands-on approach. The course considers general themes such as the logic of inquiry and the appropriateness of methodological approaches, as well as more specific topics such as quantitative data sourcing, sampling, and measurement. It provides students with the opportunity to learn and apply different quantitative tools for social science research, including descriptive statistics, bivariate analysis, and multivariate inference. Typically Offered: Fall.

CRIM 512 Qualitative Methods in Criminology (3 credits)

This course develops an understanding of the application of criminological qualitative research. This course will cover various qualitative methodologies such as interviewing, content analysis, ethnography, participant observation, and case studies. Typically Offered: Spring.

CRIM 530 Criminology in Practice (1-2 credits, max 3)

The course will explore issues in professionalism and career development with the overall goal of helping students develop the social and cultural capital necessary to be successful in the field. The core topics of the class will include career paths in criminology and criminal justice, principles of professional communication, strategies for succeeding in the job market, advanced topics in library research, strategies for publishing academic research, and ethical issues in criminology and criminal justice. Typically Offered: Varies.

CRIM 541 (s) (s) Crime Causation Topics (3 credits, max 3)

This course provides an intensive examination of specific explanations of crime. Subject matter may vary between years. Typically Offered: Varies.

CRIM 542 (s) (s) Victimization Topics (3 credits, max 3)

This course examines topics relating to criminal victimization, such as victims' rights, criminal justice system processing, and victim advocacy, as well as the impact of crime on individual victims, communities, and society. May include both primary and secondary victimization discussions. Subject matter may vary between years. Typically Offered: Varies.

CRIM 543 (s) (s) Justice Studies Topics (3 credits, max 6)

This course examines topics relating to criminal justice institutions including detailed examinations of the policies, programs and practices of police, courts, corrections, and other related agencies. Subject matter may vary between years. Typically Offered: Varies.

CRIM 544 (s) (s) Topics in Crime Types (3 credits, max 9)

This course focuses on a selected crime typology, including definitions of sub-typologies, theoretical explanations, rates and measurement, interpersonal dynamics between victims and offenders, and policy implications. Subject matter will vary each year. Typically Offered: Varies.

Cybersecurity (CYB)

CYB 110 Cybersecurity and Privacy (3 credits)

An introductory survey of the issues and complexity of cybersecurity and privacy in the digital age. Cybersecurity and privacy foundational concepts, case studies of cybersecurity breaches, application of cybersecurity for business, and social media and the general populace. Survey of common threats, threat actors, and responses. Survey of applicable laws.

CYB 210 Cybersecurity Architectures and Management (3 credits)

Introduces the components in an information technology system and their roles in system operation. Teaches students how to use these components to develop plans and processes for a holistic approach to cybersecurity for an organization.

Prereqs: CYB 110

CYB 220 Secure Coding and Analysis (3 credits)

Describes the characteristics of secure programs and the ability to implement programs that are free from vulnerabilities. Practice evaluating software, including adding security mechanisms into software and testing software for vulnerabilities. Two lectures and one 2-hour lab per week.

Prereqs: CS 121

CYB 310 Cybersecurity Technical Foundations (3 credits)

Provides students with basic information about the various threats that may be present in the cyber realm and introduces architectural mitigation strategies including cryptography.

Prereqs: CYB 110, CS 240

CYB 330 Networking and Control Systems (3 credits)

Covers common network protocols, how network components interact, and how networks evolve over time. Students expand their familiarity with network vulnerabilities.

Prereqs: CYB 210, CS 240

CYB 331 Control System Fundamentals (2 credits)

Introduces the basics of industrial control systems, where they are likely to be found, and vulnerabilities they are likely to have.

CYB 340 Network Defense (3 credits)

Covers concepts used in defending a network and the basic tools and techniques that can be taken to protect a network and communication assets from cyber threats. Provides students with knowledge and skills related to detecting and analyzing vulnerabilities and threats and taking steps to mitigate associated risks.

Prereqs: CYB 310, CYB 330

CYB 350 Operating System Defense (3 credits)

This course provides fundamentals of secure operating system administration and hardening. Provides students with an understanding of the authorities, roles, and steps associated with cyber operations.

Prereqs: CYB 310

CYB 380 Cybersecurity Lab I (3 credits)

This hands-on laboratory class allows students to get practical experience related to the cybersecurity threats, mitigations, and scenarios they have been introduced to in other courses. This includes classic buffer overflow and SQL injection style vulnerabilities, network monitoring, as well as Windows and Linux security configurations. 6 hours of lab per week.

Prereqs: CS 240

Coreqs: CYB 310, CYB 330

CYB 381 Cybersecurity Lab II (3 credits)

This hands-on laboratory class allows students to get practical experience related to cybersecurity threats, mitigations, and scenarios they have been introduced to in other courses. This course builds on CYB 380 by focusing on more advanced threats and mitigations. 6 hours of lab per week.

Prereqs: CYB 310, CYB 380

Coreqs: CYB 340, CYB 350

CYB 400 Seminar (1-16 credits)

CYB 401 Cybersecurity as a Profession (1 credit)

1 credit Ethical, legal, social, and intellectual property issues; current research topics; and other issues of importance to the professional cybersecurity researcher. Graded P/F. Graded Pass/Fail.

Prereqs: Senior Standing in Cybersecurity

CYB 404 (s) Special Topics (1-4 credits, max arranged)

Joint-listed with CYB 504

Special topic courses in the subject are often offered to allow students to learn topics of current interest that are not covered in permanent courses in the corresponding subject. Special topic courses cover topics and have learning outcomes and required academic activities and deliverables that are specific to each course offering. Cybersecurity (CYB) special topic courses at the undergraduate level may be chosen as electives toward a Bachelor of Science (BS) in Cybersecurity (CYB), Computer Science (CYB), or Computer Engineering (CE) degree. For students in all colleges, some special topic courses may be used to complement a student's interdisciplinary degree plan. Cybersecurity (CYB) special topic courses at the graduate level are usually used to complement the graduate study plan for students pursuing a Master's (MS) or Doctoral degree (PhD) in Cybersecurity (CYB) or Computer Science (CS). They may also be used to complement graduate study plans for students in the College of Engineering or graduate students in other colleges pursuing a multidisciplinary graduate degree. Significant additional work and performance required for graduate-level credit.

Prereqs: Junior standing or graduate standing or instructor permission

CYB 420 Digital Forensics (3 credits)

Cross-listed with CS 447

Joint-listed with CS 547, CYB 520

This course covers modern procedures, techniques, and best practices for digital forensic data acquisition, analysis, and case building. Covered topics and knowledge areas include (a) Applicable laws, policies, rules, procedures and best practices, and selected digital forensics techniques and tools (DFS); (b) Processes, techniques, tools, and best practices for static digital forensic data acquisition, analysis, and reporting from different host systems (HOF) and raw media (MEF). At the end of this course, students should have the knowledge, skills, and abilities to be able to appropriately prepare, perform, and record digital forensic investigation tasks on a selected set of media and hosts, of varied types. This including knowledge, skills, and abilities to: (1) Identify and describe applicable laws, policies, procedures, and static acquisition and analysis techniques and best practices for digital forensic investigations; (2) Identify the appropriate tools for a given forensic task on a given type of media, host, or image; and (3) Select and successfully use a variety of digital forensic tools for acquiring, analyzing, and recording case information. Hands-on and/or laboratory work is an essential component in this course. Significant additional work and performance required for graduate-level credit. Typically Offered: Fall.

Prereqs: CYB 310

CYB 440 Software Vulnerability Analysis (3 credits)

Provide students with a thorough understanding of system vulnerabilities, to include what they are, how they can be found/identified, the different types of vulnerabilities, how to determine the root cause of a vulnerability, and how to mitigate their effect on an operational system. Provide students with the ability to describe why software assurance is important to the development of secure systems and describe the methods and techniques that lead to secure software.

Prereqs: CYB 220, CYB 310

CYB 480 Cybersecurity Senior Capstone Design I (3 credits)

Capstone design sequence for cybersecurity science majors. Formal development techniques applied to definition, design, coding, testing, and documentation of a comprehensive cybersecurity. Projects are customer-specified, include real-world design constraints, and usually encompass two semesters. Students work in teams. Significant lab work required.

Prereqs: CS 383, CYB 381, ENGL 317, Senior Standing

CYB 481 Cybersecurity Senior Capstone Design II (3 credits)

General Education: Senior Experience

Continuation of CYB 480. Application of formal design techniques to development of a large cybersecurity science project performed by students working in teams. Significant lab work required. Typically Offered: Fall and Spring.

Prereqs: CS 383, CYB 381, CYB 480, ENGL 317

CYB 498 (s) Cybersecurity Internship (1-3 credits)

This course may be used to gain academic credit for knowledge, skills, and abilities acquired, enhanced, or refined through internal or external internships. Internship objectives and expected outcomes under this subject must be related to the subject area. Internships must include the following documents and/or deliverables: (a) internship proposal and plan including objectives, weekly hours, summary of planned tasks, or an external employer offer letter, plus a short description of how the internship supports the students' academic and career goals; (b) status update meetings and progress reports; (c) preparation and writing of an end of internship deliverable; and (d) enrollment in the University of Idaho's Internship Practicum Liability (details of this may be found on the UI Risk Management website). Examples of possible end of internship deliverables are: (1) an internship objectives' achievement assessment and lessons learned report and/or presentation, (2) an academic manuscript or portion thereof, (3) well-documented source code. The frequency and format of the intermediate and/or final deliverables must be agreed upon between the student and the internship advisor and/or coordinator before the internship begins. Objectives and learning outcomes will be assessed using a qualitative assessment method based on the quality and timeliness of the agreed upon deliverables. All internships, whether external or internal and paid or unpaid, require the approval of the student's advisor, the corresponding internship coordinator, and the University of Idaho's Risk Management office before internship start. Off-campus internships for international students also require the prior approval of the University of Idaho's International Programs Office (UI-IPO) and must be related to the student's area of study and support a student's academic and career objectives and pursued degree(s).

Prereqs: Instructor permission

CYB 499 (s) Directed Study (1-4 credits, max arranged)

Directed study courses in the subject are offered to allow students to earn academic credit for independent but guided study. Directed study courses are often offered to support students in the acquisition of prerequisite knowledge and skills or in the acquisition of knowledge and skills not usually covered by permanent courses. Directed study courses have course objectives, topics, learning outcomes, and required academic activities and deliverables that are specific to each course and section offering.

Prereqs: Instructor permission

CYB 500 (s) Master's Research & Thesis (1-10 credits)

This course allows graduate students to earn academic credit for performing research, design, development, verification and validation, documentation, writing, and academic communication activities toward the thesis degree requirement when pursuing a Master of Science (MS) in Cybersecurity (CYB) degree with thesis option. A maximum of ten (10) credits of Master's Research and Thesis may be used toward a Master's degree graduate study plan. A minimum grade of B is required for all credits within a graduate study plan. Students must be registered for a minimum of one (1) credit in each and all terms in which they are performing graduate research and thesis activities.

CYB 501 (s) Cybersecurity Graduate Seminar (1-3 credits, max 6)

This course enables colleges and departments to offer seminar-style courses in any given term and at the graduate level. Seminar-style courses in the subject are offered to allow students to learn about and discuss topics of importance to the pursued degree. Different seminar courses cover topics and have learning outcomes and required academic activities that are specific to each course offering. Examples of topics covered and discussed in seminar-style courses are: current research, discipline's best practices, history and future of the discipline, professional practice, professional communication, ethical issues, and technological and societal implications of the discipline and its practice. Graduate-level seminar-style course offerings usually require students to read, prepare, discuss, lead, and present, orally and/or in writing on the course offering topics. Typically Offered: Fall and Spring.

Prereqs: Graduate standing

CYB 502 (s) Graduate Directed Study (1-4 credits, max arranged)

Graduate-level directed study courses in the subject are offered to allow students to earn academic credit for independent but guided study. Graduate-level directed study courses are often offered to support students in: (a) the acquisition of needed prerequisite knowledge and skills, (b) the acquisition of knowledge and skills not usually covered by permanent courses, or (c) the conduct of research not directly related to a graduate project, thesis, or dissertation. Directed study courses have course objectives, topics, learning outcomes, and required academic activities and deliverables that are specific to each course and section offering.

Prereqs: Instructor permission

CYB 504 (s) Special Topics (1-4 credits, max arranged)

Joint-listed with CYB 404

Special topic courses in the subject are often offered to allow students to learn topics of current interest that are not covered in permanent courses in the corresponding subject. Special topic courses cover topics and have learning outcomes and required academic activities and deliverables that are specific to each course offering. Cybersecurity (CYB) special topic courses at the undergraduate level may be chosen as electives toward a Bachelor of Science (BS) in Cybersecurity (CYB), Computer Science (CYB), or Computer Engineering (CE) degree. For students in all colleges, some special topic courses may be used to complement a student's interdisciplinary degree plan. Cybersecurity (CYB) special topic courses at the graduate level are usually used to complement the graduate study plan for students pursuing a Master's (MS) or Doctoral degree (PhD) in Cybersecurity (CYB) or Computer Science (CS). They may also be used to complement graduate study plans for students in the College of Engineering or graduate students in other colleges pursuing a multidisciplinary graduate degree. Significant additional work and performance required for graduate-level credit.

Prereqs: Junior standing or graduate standing or instructor permission

CYB 507 CS and Cyber Research Methods (3 credits)

Cross-listed with CS 507

This course introduces graduate students to approaches, methods, techniques, tools, and legal and ethical rules and regulations for planning, designing, performing, evaluating, and reporting computer science and cybersecurity research and results. In this course, students should gain the needed knowledge and skills to be able to: (1) Identify appropriate publication venues and adequately perform related literature searches; (2) Critically read and interpret related research questions, methods, experiments, and results; (3) Develop a scientific research question; (4) Develop a research plan with corresponding research hypothesis and hypothesis testing experiments; (5) Analyze research experiment results; (6) Present research and results to a variety of audiences in written and oral form; (7) Identify applicable laws, such as human subjects research and conflicts of interest regulations, and ethical and non-ethical behaviors in the conduct of research.

Prereqs: Graduate standing or instructor permission

CYB 520 Digital Forensics (3 credits)

Cross-listed with CS 547

Joint-listed with CS 447, CYB 420

This course covers modern procedures, techniques, and best practices for digital forensic data acquisition, analysis, and case building. Covered topics and knowledge areas include (a) Applicable laws, policies, rules, procedures and best practices, and selected digital forensics techniques and tools (DFS); (b) Processes, techniques, tools, and best practices for static digital forensic data acquisition, analysis, and reporting from different host systems (HOF) and raw media (MEF). At the end of this course, students should have the knowledge, skills, and abilities to be able to appropriately prepare, perform, and record digital forensic investigation tasks on a selected set of media and hosts, of varied types. This including knowledge, skills, and abilities to: (1) Identify and describe applicable laws, policies, procedures, and static acquisition and analysis techniques and best practices for digital forensic investigations; (2) Identify the appropriate tools for a given forensic task on a given type of media, host, or image; and (3) Select and successfully use a variety of digital forensic tools for acquiring, analyzing, and recording case information. Hands-on and/or laboratory work is an essential component in this course. Significant additional work and performance required for graduate-level credit. Typically Offered: Fall.

CYB 536 Advanced Information Assurance Concepts (3 credits)

Cross-listed with CS 536

This course covers theory, approaches, techniques, and best practices for (a) Secure and resilient system and network architectures (IAA); (b) Cybersecurity compliance (IAC); (c) Cybersecurity standards (IAS); and (d) Security risk analysis (SRA). At the end of this course, given examples of cyber system models and scenarios, architectures, and implementations of different types and of varied complexity, students should have the knowledge, skills, and abilities to be able to: (1) Understand organizational and/or cyber-system requirements, architecture, design, and implementation; (2) Describe and analyze the system with appropriate detail; (3) Develop a threat model; (4) Identify potential vulnerabilities; (5) Identify appropriate risk analysis processes and standards; (6) Perform risk analysis and assessment; (7) Identify, evaluate, design, apply, and document security and resiliency enhancements and risk removal or mitigation approaches, tasks, and security controls. Such approaches, tasks, and controls including a combination of the following types: organizational, policy, technical, human factors, processes, protocols, techniques, and documents as appropriate.

Prereqs: Graduate standing and instructor permission

CYB 540 Advanced Networking & Security (3 credits)

This course covers the following topics and knowledge areas: (a) Advanced networking technology, algorithms, and protocols, and their cybersecurity implications (ANT) and (b) Wireless and mobile device algorithms, technologies, and protocols, and their cybersecurity implications (MOT). At the end of this course, students should have the knowledge, skills, and abilities to be able to: (1) Identify, classify, and describe, with detail, key modern networking and security algorithms, technologies, and protocols at and across several layers of the networking stack and for wired and wireless media; (2) Identify, classify, and describe advanced approaches, technologies, and protocols for secure and private digital networking within an enterprise and across federated domains, this including the IT, IoT, and mobile device realms. Several advanced and/or state-of-the-art networking and security technologies, algorithms, and protocols will be investigated in great depth and include lab-based hands-on implementations, investigations, and/or experiments. Typically Offered: Fall.

Prereqs: Graduate standing and Instructor permission

CYB 599 (s) Non-thesis Master's Resrch (1-6 credits, max 30)

This course allows graduate students to earn academic credit for performing research, design, development, verification and validation, documentation, writing, and academic communication activities toward the non-thesis research or graduate project degree requirement when pursuing a Master of Science (MS) in Cybersecurity (CYB) degree with non-thesis option. A maximum of six (6) credits of CYB 599 may be used toward a Master's degree study plan. A minimum grade of B is required for all credits within a graduate study plan. Students must be registered for a minimum of one (1) credit in each and all terms in which they are performing non-thesis graduate research or project activities. Typically Offered: Fall and Spring.

Prereqs: Graduate standing and Instructor permission

Dance (DAN)

DAN 100 Dance in Society (3 credits)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

Introduction to dance as an art form, as entertainment, and as a lifelong activity; emphasis on appreciation and understanding of movement as an expression of human values, genres and historical styles, factors affecting change, current issues. Typically Offered: Fall and Spring.

DAN 101 Dance Seminar (1 credit, max 2)

Seminar course supports student transitions to dance at the university level, career preparations, research writing, and Senior Project (DAN 490) proposals.

Prereqs: Major or minor in Dance

DAN 105 (s) Dance (1 credit, max arranged)

Dance activity classes for all university students (modern, ballet, hip hop, jazz, tap, and a variety of social dance: ballroom, Latin dance, swing, country western, etc.). Courses above a beginning level may require placement session or assessment by instructor to determine the correct course level. Two-three hours per week. Pass/Fail. Cooperative: open to WSU degree-seeking students.

DAN 116 (s) Technique (1 credit, max arranged)

Joint-listed with DAN 216, DAN 416 and DAN 516

Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or DAN 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with DAN 216 or DAN 416 courses. Additional requirements for DAN 216 and DAN 416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (DAN 116, DAN 216, DAN 416, and DAN 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 200 (s) Seminar (1-16 credits)

Credit arranged

DAN 203 (s) Workshop (1-16 credits)

Credit arranged

DAN 204 (s) Special Topics (1-16 credits)

Credit arranged

DAN 210 Dance Performance (1-2 credits, max 12)

Open to all students by audition. Performance in advanced student choreography in formal performance; Choreography Lab alt/years - Fall) and Dancers, Drummers, Dreamers (Spring). Dance styles may include modern, jazz, ballet, tap. Company class plus additional weekly rehearsals and production tasks lead to performance. Variable credit dependent on number of choreographic work commitments, maximum of 2 works (1 credit per work). See class schedule for audition dates. Recommended Preparation: dance experience.

Coreqs: DAN 105 or DAN 216 or DAN 416

DAN 211 Dance Conditioning (1 credit, max 2)

Learn and apply current conditioning and cross-training tools and practices designed to support the training of the 21st century dancer. Students can expect to learn more about the dancing body with anatomical references, individuals needs to support a long and healthy dance career, general fitness components, and current trends in dance conditioning.

DAN 216 (s) Technique (1 credit, max arranged)

Joint-listed with DAN 116, DAN 416 and DAN 516

Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or DAN 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with DAN 216 or DAN 416 courses. Additional requirements for DAN 216 and DAN 416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (DAN 116, DAN 216, DAN 416, and DAN 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 284 Dance Improvisation (1 credit)

Exploration of movement potential through creative play and spontaneous problem solving. Course designed to enhance self-awareness and ability to react and make choices. Emphasizes improvisation as a mode of performance and as a tool for dance movement creation. Open to all students.

DAN 299 (s) Directed Study (1-16 credits)

Credit arranged

DAN 321 Dance Pedagogy (3 credits)

Learning styles, teaching styles, and behaviors as they affect teaching and learning in dance; science of dance training. (Alt/years)

DAN 324 Integrated Movement Practices (3 credits)

Joint-listed with DAN 524

This course aims to enhance anatomical knowledge and experiential understanding of the body with specific applications to dance and other movement practices. Anatomical terminology will be studied and applied to movement explorations in the dance studio laboratory setting, frequently utilizing methodologies found in somatic practices. Students will be expected to engage deeply and personally with course material. Those taking the course for graduate credit will be expected to complete an additional specialized research paper and presentation. (Alt/years)

DAN 360 Teaching Creative Dance and Dance Integration for Children (1-2 credits)

Conceptual approach to dance with basic principles and techniques rooted in developmental movement patterns for teaching dance to early childhood through elementary age children and integrating creative dance with other subject areas; emphasis on content, methods, and resource material. Lecture and lab experiences are integrated in class, once a week. As a service learning course, students taking the course for 2 cr will complete additional practicum work in the local school district, private dance schools, or with other community partners. Typically Offered: Fall and Spring.

Prereqs: EDCI 301 or MVSC 201 or Permission

Coreqs: EDCI 320 and EDCI 322 and EDCI 325 and EDCI 409; or Permission

DAN 384 Dance Composition I (3 credits)

Study of fundamental elements of dance composition and application of improvisation skills to movement creation. Additional movement research projects/assignments for graduate students will be individually directed and determined with instructor guidance. Majors and minors have priority, non-majors/minors may take the course by instructor permission. (Spring only)

Prereqs: DAN 284

DAN 385 Dance Composition II (3 credits)

Intermediate to advanced exploration of choreographic procedures and performance. (Fall, Alt/years)

Prereqs: DAN 284 and DAN 384

DAN 400 (s) Seminar (1-16 credits)

Credits arranged

DAN 403 (s) Workshop (1-16 credits)

Credit arranged

DAN 404 (s) Special Topics (1-16 credits)

Credit arranged

DAN 410 Pre-professional Dance Performance (1-3 credits, max 12)

All students may audition for faculty choreographed and formally produced work; casting priority given to majors and minors. Focus is placed on involvement in the rehearsal and choreographic process. Regular weekly rehearsals required in addition to involvement in company production needs and technical rehearsals. Variable credit dependent on number of choreographic work commitments, maximum of 3 works (1 credit per work). See class schedule for audition dates.

Prereqs: Two semesters of DAN 210; or Permission

Coreqs: Minimum of two DAN 216 or DAN 416 courses

DAN 412 Choreography Lab (2 credits, max 6)

Independent work on advanced levels of choreography leading to formally produced concerts. Develop and refine practical skills as well as personal approaches to choreographic process. Practice leadership in rehearsal direction and production management (Every Spring; Fall alt/years)

Prereqs: DAN 284, DAN 384 and DAN 385

DAN 416 (s) Technique (1 credit, max arranged)

Joint-listed with DAN 116, DAN 216, and DAN 516

Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or DAN 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with DAN 216 or DAN 416 courses. Additional requirements for DAN 216 and DAN 416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (DAN 116, DAN 216, DAN 416, and DAN 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 421 Dance History and Contemporary Views (3 credits)

Development of dance as a performing art from lineage-based to contemporary styles building upon course topics covered in Dance in Society, DAN 100. Emphasis will be placed on 20th and 21st century developments in dance with a focus on ballet and modern. Students registering for graduate credit are required to complete additional research paper make two substantial presentations synthesizing overriding concepts within a historical concept. (Alt/years)

Prereqs: DAN 100

DAN 422 Labanalysis (3 credits)

Joint-listed with DAN 522

An exploration of movement concepts based on Rudolf Laban's principles of Efforts, Shape, and Space. Additional projects/assignments required for graduate credit. (Spring, Alt/years)

DAN 490 Senior Project (2 credits)

General Education: Senior Experience

A senior capstone course with individualized projects representing the student's work, consistent with the chosen emphasis within the dance degree (e. g. , concerts of original work, a major choreographic work, major performance, teaching or other research-based projects). Typically Offered: Varies.

Prereqs: 2 credits of DAN 101, Senior standing and Major in Dance

DAN 495 (s) Practicum In Tutoring (1 credit, max 2)

Tutorial services performed by advanced students under faculty supervision. Graded P/F.

Prereqs: Permission

DAN 499 (s) Directed Study (1-16 credits)

Credit arranged

DAN 502 (s) Directed Study (1-16 credits)

Credit arranged

DAN 503 (s) Workshop (1-16 credits)

Credit arranged

DAN 504 (s) Special Topics (1-16 credits)

Credit arranged

DAN 505 (s) Professional Development (1-16 credits)

Credit arranged

DAN 516 (s) Technique (1 credit, max arranged)

Joint-listed with DAN 116, DAN 216, and DAN 416

Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or DAN 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with DAN 216 or DAN 416 courses. Additional requirements for DAN 216 and DAN 416 students include higher expectations for growth, performance, and attendance. Additional project/assignment required for graduate credit (DAN 516). For entrance into intermediate and advanced courses (DAN 116, DAN 216, DAN 416, and DAN 516) students must participate in placement session (required for majors/minors) to determine correct level. Cooperative: open to WSU degree-seeking students. Additional work required for graduate credit.

DAN 521 Dance History and Contemporary Views (3 credits)

Joint-listed with DAN 421

Development of dance as a performing art from lineage-based to contemporary styles building upon course topics covered in Dance in Society, DAN 100. Emphasis will be placed on 20th and 21st century developments in dance with a focus on ballet and modern. Students registering for graduate credit are required to complete additional research paper make two substantial presentations synthesizing overriding concepts within a historical concept. (Alt/years)

Prereqs: DAN 100

DAN 524 Integrated Movement Practices (3 credits)

Joint-listed with DAN 324

This course aims to enhance anatomical knowledge and experiential understanding of the body with specific applications to dance and other movement practices. Anatomical terminology will be studied and applied to movement explorations in the dance studio laboratory setting, frequently utilizing methodologies found in somatic practices. Students will be expected to engage deeply and personally with course material. Those taking the course for graduate credit will be expected to complete an additional specialized research paper and presentation. (Alt/years)

DAN 584 Dance Composition I (3 credits)

Joint-listed with DAN 384

Study of fundamental elements of dance composition and application of improvisation skills to movement creation. Additional movement research projects/assignments for graduate students will be individually directed and determined with instructor guidance. Majors and minors have priority, non-majors/minors may take the course by instructor permission. (Spring only)

Early Childhood Development and Education (ECDE)

ECDE 210 Introduction to Early Childhood Education (3 credits)

This course provides an overview of the complexity of working with young children and their families. The topics include introduction to the history of early childhood education, supportive agencies, roles of professionals, contexts of typical and atypical child and family development, and curricular models. This course requires 20 hours of service learning. Typically Offered: Fall.

ECDE 234 Infancy and Early Childhood (3 credits)

Influences on development before birth through the preschool years; factors that determine physical, emotional, cognitive, social, and creative development. Typically Offered: Spring.

ECDE 235 Principles and Methods of Child Observation (3 credits)

Development of skills necessary to observe, record, and interpret child behavior; observations to be arranged. Typically Offered: Fall.

Prereqs: ECDE 234 with a grade of 'C' or better

ECDE 254 Middle Childhood Development (3 credits)

Emotional, social, cognitive, and physical development of the school-age child through pre-adolescence in the context of family, school, peer group and community. Typically Offered: Fall.

Prereqs: HDFS 105 or ECDE 234 or Permission

ECDE 330 Positive Behavior Intervention and Support (3 credits)

Drawing on developmental theories and behavioral principles, this course discusses evidence-based strategies for strengthening desirable behaviors and reducing challenging behaviors in students. Both theoretical foundations and practical techniques of Positive Behavior Intervention and Support (PBIS) will be addressed. Typically Offered: Fall.

Prereqs: HDFS 105 or ECDE 210 or PSYC 101

ECDE 333 Developmental Curriculum for Young Children (4 credits)

Principles and practices of a developmentally based curriculum, assessment, intervention, and evaluation. Three hours of lecture and two hours of lab per week. Typically Offered: Spring.

Prereqs: ECDE 235 with a grade of 'C' or better or Permission

ECDE 340 Parent-Child Relationships in Family and Community (3 credits)

May be taken by nonmajors. Dynamics of parent-child interactions and models for parent education programs in community and school settings. Typically Offered: Fall.

Prereqs: ECDE 234 or HDFS 334

ECDE 404 (s) Special Topics (1-16 credits, max arranged)**ECDE 410 Advanced Infant and Toddler Development and Learning (3 credits)**

Joint-listed with ECDE 510

This course provides an in-depth study of the child from conception to three years of age. The topics may include an overview of typical and atypical development with various theoretical perspectives in each of the developmental domains, quality caregiving practices, and supported services and/or programs. Additional assignments required for graduate credit. Typically Offered: Spring (Odd Years).

ECDE 420 Inclusive Early Childhood Education (3 credits)

Joint-listed with ECDE 520

This course examines the needs, opportunities, barriers and resources to inclusive early childhood education. The relevant laws, policies, research-based practices and models will be studied to understand the context for systems change. Additional assignments required for graduate credit. Typically Offered: Spring (Even Years).

ECDE 430 Cognitive and Motivation in Human Learning (3 credits)

Joint-listed with ECDE 530

This course discusses the research and theory in the psychology of learning from cognitive, developmental, behavioral, and motivation perspectives. The course's contents are designed to provide students with historical background, research evidence, and real-life implementation of theories in various contexts, thus balancing theoretical and practical perspectives. Up-to-date, supplementary research articles will be provided to encourage students to think critically about those theories and to reflect on theories' implications in their own learning environments. Additional work required for graduate credit. Typically Offered: Unknown.

Prereqs: ECDE 210 or ECDE 234

ECDE 435 Feeding Young Children in Group Settings (1 credit)

This course increases awareness concerning the best practices in feeding young children. Practical, hands-on activities and assignments are included in the course through videotapes and the course website, www.aee.uidaho.edu/feeding. Typically Offered: Spring.

ECDE 436 Theories of Child and Family Development (3 credits)

Identification, interpretation, and evaluation of individual and family developmental theories. Typically Offered: Spring.

Prereqs: HDFS 105 or ECDE 234 and Junior standing or Permission

ECDE 480 Assessment: Early Childhood/SPED (3 credits)

The assessment process, link between assessment, curriculum planning, and IEP/IFSP development, cultural responsiveness in assessment, legal issues and family partnerships. Practical experience using strategies and tools for screening and assessing development of infants and children birth through age 8, including typical and atypical development. Recommended Preparation: ECDE 234 and ECDE 333 Typically Offered: Fall.

Prereqs: "C" or better in ECDE 234, ECDE 235, & EDSP 300

ECDE 481 Early Childhood SPED Curriculum (3 credits)

Overview of typical and atypical infant and child development; instructional strategies for working with infants, toddlers and young children through third grade, linking assessment, curriculum and IEP and IFSP development, designing instructional programming for natural settings and formal settings; involving families, collaboration among professionals, working with volunteers and paraprofessionals. Recommended Preparation: ECDE 234 and ECDE 333. Typically Offered: Spring.

Prereqs: 'C' or better in ECDE 234, EDSP 300, & EDCI 302

ECDE 490 Infant & Toddler SPED Internship (1-7 credits)

Direct practical experience in settings serving typically and atypically developing infants: ages birth to 35 months. Demonstration of screening, assessment, development of IFSP, programming in natural environments, working closely with parents to increase their roles as partners and collaboration among service providers. Typically Offered: Spring (Odd Years).

Prereqs: ECDE 480 and ECDE 481

ECDE 497 INTERN: Preschool (1-16 credits)

Credit arranged. Supervised applied experience in child development and family relations. The field experience offers opportunity for students to learn about working in settings for children and families. Typically Offered: Fall and Spring.

Prereqs: 'C' or better in ECDE 234, ECDE 235, ECDE 333, and Permission

ECDE 498 (s) Internship (1-16 credits)**ECDE 499 (s) Directed Study (1-16 credits, max arranged)****ECDE 502 (s) Directed Study (1-16 credits)**

Credit arranged

ECDE 504 (s) Special Topics (1-16 credits)

Credit arranged

ECDE 510 Advanced Infant and Toddler Development and Learning (3 credits)

Joint-listed with ECDE 410

This course provides an in-depth study of the child from conception to three years of age. The topics may include an overview of typical and atypical development with various theoretical perspectives in each of the developmental domains, quality caregiving practices, and supported services and/or programs. Additional assignments required for graduate credit. Typically Offered: Spring (Odd Years).

ECDE 520 Inclusive Early Childhood Education (3 credits)

Joint-listed with ECDE 420

This course examines the needs, opportunities, barriers and resources to inclusive early childhood education. The relevant laws, policies, research-based practices and models will be studied to understand the context for systems change. Additional assignments required for graduate credit. Typically Offered: Spring (Even Years).

ECDE 530 Cognitive and Motivation in Human Learning (3 credits)

Joint-listed with ECDE 430

This course discusses the research and theory in the psychology of learning from cognitive, developmental, behavioral, and motivation perspectives. The course's contents are designed to provide students with historical background, research evidence, and real-life implementation of theories in various contexts, thus balancing theoretical and practical perspectives. Up-to-date, supplementary research articles will be provided to encourage students to think critically about those theories and to reflect on theories' implications in their own learning environments. Additional work required for graduate credit. Typically Offered: Unknown.

ECDE 540 Parent-Child Relationships (3 credits)

Open to nonmajors. The developing family; patterns of child rearing. Typically Offered: Spring.

Prereqs: ECDE 234 or HDFS 334, HDFS 440, and 6 credits in Psychology and/or Sociology or Equivalent

Economics (ECON)

Notes: No course (CBE or outside the college) that is required in a CBE student's curriculum may be taken by CBE undergraduates on a P/F

basis, with the exception of courses that are taught only on a P/F basis. Only upper-division CBE courses used as free electives may be taken by CBE undergraduates on a P/F basis.

The combination of credits for ECON 201, ECON 202, and ECON 272 may not exceed 6 credits.

Prerequisite: Enrollment in 300- and 400-level economics courses is restricted to students who have completed at least 58 credits. In addition, CBE students must have earned at least a 2.4 GPA in the CBE predictor courses. Students who have not completed the prerequisites to a course for which they are otherwise eligible may register for the course with the instructor's approval.

ECON 201 Principles of Macroeconomics (3 credits)

General Education: Social and Behavioral Ways of Knowing
ECON 201 and ECON 202 may be taken in either order. Organization and operation of American economy; supply and demand, money and banking, macroeconomic analysis of employment, aggregate output and inflation, public finance, and economic growth. ECON 201 or ECON 202 carry only two credits after ECON 272. May involve some evening exams. Typically Offered: Fall, Spring and Summer.

ECON 202 Principles of Microeconomics (3 credits)

General Education: Social and Behavioral Ways of Knowing
ECON 201 and ECON 202 may be taken in either order. Microeconomic principles governing production, price relationships, and income distribution. ECON 201 or ECON 202 carry only two credits after ECON 272. May involve some evening exams. Typically Offered: Fall, Spring and Summer.

ECON 204 (s) Special Topics (1-16 credits)

Credits arranged

ECON 272 Foundations of Economic Analysis (4 credits)

General Education: Social and Behavioral Ways of Knowing
One-semester introductory course on the principles of economics, covering both micro- and macro- concepts, theory, analysis, and applications. Completion of ECON 272 is equivalent to completion of both ECON 201 and 202 as a prerequisite for other courses, as well as the general requirements for all B. S. Business majors and the Economics B. A. or B. S. major. Econ 272 will count for no credit if a student completes both ECON 201 and ECON 202. Typically Offered: Varies.

ECON 298 (s) Internship (1-16 credits)

Credits arranged

ECON 299 (s) Directed Study (1-16 credits)

Credits arranged

ECON 340 Managerial Economics (3 credits)

Covers economic analysis of business management decisions. Topics may include but are not limited to market supply and demand analysis, pricing strategies, strategic interaction, vertical and horizontal integration, and principal-agent problems. Typically Offered: Spring.

Prereqs: ECON 202 or ECON 272

ECON 343 Money and Banking (3 credits)

Influence of money and banking on economic activity; influence of monetary policies to achieve society's economic goals. May include evening exams.

Prereqs: ECON 201 and ECON 202, or ECON 272

ECON 351 Intermediate Macroeconomic Analysis (3 credits)

Theory of the economy as a whole; national income accounting as a tool of analysis; national output and income, employment, price levels, and growth. May include evening exams.

Prereqs: ECON 201 and ECON 202, or ECON 272, or Permission

ECON 352 Intermediate Microeconomic Analysis (3 credits)

Theory of the consumer, firm, industry, market, price determination, and allocation of productive resources.

Prereqs: ECON 201 and ECON 202, or ECON 272 or Permission

ECON 395 Regional Economic Analysis (3 credits)

Regional and local public economics theory; practical applications of input-output modelling; economic impacts assessment; social benefit/cost analysis; introduction to forecasting. Typically Offered: Spring.

Prereqs: ECON 201 or ECON 202 or ECON 272

ECON 398 (s) Economics Internship Program (1-3 credits, max 6)

Enrollment restricted to economics majors; may not be used to fulfill upper-division economics requirement in any of the three economics degree programs. Graded P/F. Relevant learning experience in business and government.

Prereqs: Permission

ECON 400 (s) Seminar (1-16 credits)

Credit arranged

ECON 404 (s) Special Topics (1-16 credits)

Credit arranged

ECON 407 Public Finance (3 credits)

Role of government in a market economy; public choice and collective decision-making; tax-shifting and incidence; structure and economics of federal taxes; governmental budgeting; public debt; special topics.

Prereqs: ECON 201 and ECON 202, or ECON 272

ECON 415 Market Structure and Governmental Policy (3 credits)

Analysis of economic behavior under different market structures, e.g., competition, monopoly, oligopoly, monopsony, oligopsony, bilateral monopoly and cartels; theory of contestable markets; antitrust; regulation; selected case studies.

Prereqs: ECON 202 or ECON 272 or Permission

ECON 441 Labor Economics (3 credits)

Structure and composition of the labor force, wages and employment, human resources, income-maintenance program, and related policy issues.

Prereqs: ECON 201 and ECON 202, or ECON 272

ECON 446 International Economics (3 credits)

General Education: International

Analysis of international trade and financial transactions; trade policy; foreign exchange markets; adjustment processes; and international monetary system. May include evening exams. Typically offered: Fall. Typically Offered: Fall.

Prereqs: ECON 201 and ECON 202, or ECON 272

ECON 447 International Development Economics (3 credits)

General Education: International

Cross-listed with AGECE 447

Characteristics of development; historical perspective; macroeconomic theories and policies: models of growth, poverty, inequality, trade, aid and debt; microeconomic theories and policy: health, nutrition and education, agriculture, rural markets for land, labor and credit, and corruption. Typically Offered: Spring.

Prereqs: ECON 201 and ECON 202, or ECON 272, or Permission

ECON 451 Applied Environmental and Natural Resource Economics (3 credits)

Cross-listed with AGECE 451

Economic analysis of current issues pertaining to environmental and natural resources. Economic tools will be applied in the contexts of climate change, valuation of the environment, sustainable development, energy, water, environmental risk, etc. Specific cases used to describe economic theories and tools used by experts working in the field.

Prereqs: AGECE 301 or AGECE 302; or ECON 351 or ECON 352; or Permission

ECON 453 Econometrics (3 credits)

Cross-listed with STAT 433

Application of statistical methods to economics and business studies; emphasis on regression analysis methods.

Prereqs: STAT 251 or STAT 301

ECON 490 Economic Theory and Policy (3 credits)

General Education: Senior Experience

A capstone course for economics majors. Integrates theory, quantitative methods, and policy in the economics major; will involve independent research projects.

Prereqs: ECON 351, ECON 352, and ECON 453

ECON 499 (s) Directed Study (1-16 credits)

Credit arranged

ECON 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ECON 501 (s) Seminar (1-16 credits)

Credit arranged

ECON 502 (s) Directed Study (1-16 credits)

Credit arranged

ECON 504 (s) Special Topics (1-16 credits)

Credit arranged

ECON 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Ed-Curriculum & Instruction (EDCI)

EDCI 200 (s) Seminar (1-16 credits)

Credit arranged

EDCI 201 Contexts of Education (3 credits)

General Education: Social and Behavioral Ways of Knowing

Joint-listed with EDCI 550

Gen Ed: Social Science Introduction to the philosophical, social, cultural, historical, legal and political contexts of schooling. Develops an understanding of the sources of curriculum, standards, and assessments.

Explores what it means to become a successful teacher committed to student success through the development of observation and analysis skills. Requires additional 20 hours of service learning.

EDCI 203 (s) Workshop (1-16 credits)

Credit arranged

EDCI 204 (s) Special Topics (1-16 credits)

Credit arranged

EDCI 241 Introduction to the Study of Language (3 credits)

Cross-listed with ANTH 241 and ENGL 241

Surveys of sound patterns, morphological processes and syntactic structures; questions of language acquisition, variation, and history; exercises from a variety of languages, with emphasis on American English.

EDCI 298 (s) Internship (1-16 credits)

Credit arranged

EDCI 299 (s) Directed Study (1-16 credits)

Credit arranged.

EDCI 301 Learning, Development, and Assessment (3 credits)

General Education: Social and Behavioral Ways of Knowing

Joint-listed with EDCI 543

This course is an exploration of theories of learning and human development and the use of this knowledge to support student success in classroom settings. It provides a practical understanding of motivation as a classroom management tool and develops a fundamental understanding of assessment terminology, the uses of assessment and its relationship to student success. Typically Offered: Fall, Spring and Summer.

EDCI 302 Teaching Culturally Diverse Learners (3 credits)

General Education: American Diversity

Joint-listed with EDCI 544

General Education: American Diversity. An examination of cultural and linguistic diversity in classrooms. Explores strategies for creating the culturally inclusive classroom that values diversity and supports student success. Examines the use of instructional planning as a tool for motivation and classroom management. Includes required field experiences. Typically Offered: Fall, Spring and Summer.

Prereqs: EDCI 301 or FCS 234; and admission to teacher education program

EDCI 320 Teaching Reading and Literacy (3 credits)

Foundations of literacy and the methods and strategies involved in the teaching of reading. Topics include: phonological awareness, phonemic awareness, and phonics; vocabulary; fluency; comprehension.

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 322, EDCI 325, EDCI 409 and DAN 360; or Permission

EDCI 321 Literature for Children (3 credits)

Specific methods, research, curricula, and technology in teaching Children's Literature for diverse populations. Facilitating of understanding content, curriculum, methods and assessment in an integrated setting. Typically Offered: Fall and Spring.

EDCI 322 Teaching Writing/Language Arts (3 credits)

Teaching communication, including listening and speaking, and the teaching and evaluation of writing. Topics include principles, problems, methods, and strategies for promoting the ability to communicate with an emphasis on the development of the writer. Other topics include vocabulary; spelling; grammar; fluency.

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 320, EDCI 325, EDCI 409, and DAN 360; or Permission

EDCI 325 Elementary Art Education (3 credits)

Specific methods, research, curricula, and technology in teaching elementary art for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 320, EDCI 322, EDCI 409, and DAN 360; or Permission

EDCI 327 Elementary Math Education (3 credits)

Specific methods, research, curricula, and technology in teaching elementary mathematics for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.

Prereqs: EDCI 302 and MTHE 235 and MTHE 236 or MTHE 301; or Permission

Coreqs: EDCI 328, EDCI 329, and EDCI 408; or Permission

EDCI 328 Elementary Social Studies Education (3 credits)

Specific methods, research, curricula, and technology in teaching elementary social studies for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 327, EDCI 329, and EDCI 408; or Permission

EDCI 329 Elementary Science Education (3 credits)

Specific methods, research, curricula, and technology in teaching elementary science for diverse populations. Facilitation of understanding content, curriculum, methods and assessment in an integrated setting.

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 327, EDCI 328, and EDCI 408; or Permission

EDCI 400 (s) Seminar (1-16 credits)

Credit arranged

EDCI 401 Internship Seminar (1 credit)

General Education: Senior Experience

A review of the professional commitments and responsibilities and the interactions and partnerships that support student learning and well-being.

Coreqs: EDCI 483, EDCI 484, EDCI 485, CTE 484, AGED 460, MUST 432, or PEP 484; or Permission

EDCI 402 Practicum (1-16 credits)

Credit arranged

EDCI 403 (s) Workshop (1-16 credits)

Credit arranged

EDCI 404 (s) Special Topics (1-16 credits)

Credit arranged

EDCI 405 (s) Professional Development (1-16 credits)

Credit arranged. Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward graduate degree programs, but may be used in a fifth-year program. Additional projects/assignments required for graduate credit.

EDCI 408 Integrated Elementary Methods Practicum I (3 credits)

Implementation of elementary content methods, research, curricula, and technology in K-8 classrooms with specific focus on culturally responsive management of a classroom and social-emotional learning, including recognition of early warning signs in students. Course will include 30 hours in K-8 classrooms. Typically Offered: Varies.

Prereqs: EDCI 302

Coreqs: EDCI 327, EDCI 328, and EDCI 329

EDCI 409 Integrated Elementary Methods Practicum II (1 credit)

Implementation of elementary content methods, research, curricula, and technology in K-8 classrooms. Course will include 30 hours in K-8 classrooms and 15 hours of associated scheduled activities. Typically Offered: Fall and Spring.

Prereqs: EDCI 408

Coreqs: EDCI 320, EDCI 322, EDCI 325, and DAN 360

EDCI 410 Technology, Teaching and Learning (2 credits)

Joint-listed with EDCI 545

Specific methods, research, and strategies providing proficiency in relevant technology skills and practices to enhance classroom management and instruction.

EDCI 411 Geometry, Measurement, and Trigonometry (3 credits)

Examines topics in measurement, geometry, and trigonometry and the way that grade 5-10 students develop an understanding of these ideas. Emphasis will be placed on recent and seminal research on learning and teaching geometry to develop mathematical practice as described in CCSS-M, especially for topics such as symmetry, congruence and similarity, right triangle trigonometry, transformations, unit, and partitioning of space. Particular emphasis will be placed on extended tasks that expose learners to investigation, conjecture, argumentation, and incorporating dynamic software. Does not count toward mathematics MAT or MS graduate programs. Preq: MTHE 236 and admission to Teacher Education; or instructor permission

EDCI 413 Data Analysis and Probability (3 credits)

Examines the understandings that are foundational to probability and data analysis, and how grade 5-10 students develop these ideas. Topics include experimental and theoretical probability, sample space, independent and dependent events, measures of central tendency and spread, and data representations. Emphasis will be on proof and argumentation and modeling with mathematics to draw conclusions, on the specialized mathematics knowledge for teaching, and how engagement in this content exemplifies the mathematical practices expressed in CCSS-M.

EDCI 416 Proportional and Algebraic Reasoning (3 credits)

This course examines topics related to the development and application of reasoning with proportional quantities, and how students develop an understanding of these, application of rational number and operations, and how grade 5-10 students develop algebraic reasoning from arithmetic thinking, by abstracting from computation and working with generalized numbers. Topics include comparison, ratio, proportion, rate, equality and relational thinking, generalizing, patterns, and modeling. Emphasis will be on modeling with mathematics to analyze problems, reasoning abstractly and quantitatively, looking for and making sense of structure, proof and argumentation, the specialized mathematics knowledge needed for teaching these topics, and on how engagement in this content exemplifies the mathematical practices expressed in CCSS-M.

EDCI 418 Culturally Responsive Pedagogy (1 credit)

This course provides a general introduction to the principles of Culturally Relevant Pedagogy. In particular, this module will help students attain a high level of cultural competence, social justice, and diversity such that they can apply this knowledge to lesson planning, pedagogy, and engagement with diverse learners. It will also equip future instructors to work with parents, families, and communities from diverse cultural and linguistic backgrounds.

EDCI 420 Gender and Sexual Diversity in Schools (1 credit)

This course provides future instructors with the skills needed to critically and sensitively work with gender non-conforming, gay, lesbian, and bisexual students in schools. It will provide those enrolled with a basic understanding of the ways that such students have been and continue to be marginalized within traditional education, the rights of students and communities re: schools, and best practices for working with and empowering gender non-conforming, gay, lesbian, and bisexual students in schools.

EDCI 421 Racial and Ethnic Diversity in Schools (1 credit)

This course provides future instructors with the skills needed to critically and sensitively work with students of color in schools. It will provide those enrolled with a basic understanding of the ways that students of color have been and continue to be marginalized within traditional education, the rights of students and communities re: schools, and best practices for working with and empowering students of color in schools.

EDCI 422 Socio-Economic Diversity in Rural Schools (1 credit)

This course provides future instructors with the skills needed to critically and sensitively work with low-income students from rural communities. It will provide those enrolled with a basic understanding of the ways that such students have been and continue to be marginalized within traditional education, the rights of students and communities re: schools, and best practices for working with and empowering low-income students from rural communities.

EDCI 424 Universal Design in Learning (1 credit)

This course provides a general introduction to the principles of Universal Design in Learning. It will introduce the principles, guidelines, and checkpoints that are included in the framework. It will focus on the importance of intentional, systematic and flexible design of instruction in which all students are included and making progress in learning.

EDCI 426 Working with Native American Students and Communities (1 credit)

This course provides future instructors with the skills needed to critically and sensitively work with Native American students and communities. It will provide those enrolled with a basic understanding of the ways that Native students have been marginalized within traditional education, the rights of Native students and communities re: schools, and best practices for working with and empowering Native students in schools.

EDCI 431 Secondary English Methods (3 credits)

Specific methods, research, curricula, and media in teaching Secondary English Methods. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 441

EDCI 432 Secondary Social Studies Methods (3 credits)

Specific methods, research, curricula, and media in teaching Secondary Social Studies Methods. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 442

EDCI 433 Secondary Science Methods (3 credits)

Specific methods, research, curricula, and media in teaching Secondary Science Methods. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 443

EDCI 434 Secondary Mathematics Methods (3 credits)

Specific methods, research, curricula, and media in teaching Secondary Mathematics Methods. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 454

EDCI 436 Secondary Art Methods (3 credits)

Specific methods, research, curricula, and media in teaching Secondary Art Methods. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 446

EDCI 437 Secondary Foreign Language Methods (3 credits)

Specific methods, research, curricula, and media in teaching Secondary Foreign Language.

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 447

EDCI 441 Secondary English Practicum (1 credit)

Implementation of Secondary English methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 431

EDCI 442 Secondary Social Studies Methods Practicum (1 credit)

Implementation of secondary social studies methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 432

EDCI 443 Secondary Science Methods Practicum (1 credit)

Implementation of secondary science language methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 433

EDCI 445 Young Adult Literature (3 credits)

Major trends and traditions in Young Adult (YA) Literature. Course concentration will vary by semester and may focus on the research, theory, and practice of literature study in secondary schools and sociohistorical, sociocultural, and literary contexts.

Prereqs: ENGL 102

EDCI 446 Secondary Art Methods Practicum (1 credit)

Implementation of secondary art methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 436

EDCI 447 Second Language Teaching Methods Practicum (1 credit)

Implementation of secondary foreign language methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. Typically Offered: Varies.

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 449

EDCI 448 Introduction to ENL (3 credits)

Joint-listed with EDCI 548

In this course, students will be introduced to the evolution, research, and current federal and state legal mandates of ENL education, the processes of language acquisition and development, and the role that culture plays in students' educational experiences. The students will begin to apply Language Acquisition Theory to their lesson planning, aligning their instruction to ELD and CCSS.

EDCI 449 Second Language Teaching Methods (3 credits)

Joint-listed with EDCI 549

In this course, students will learn how to incorporate students' diverse cultural backgrounds and language proficiency levels into instructional planning that aligns with Second Language Development Standards. Students will learn how to measure the level of Language Proficiency, become familiar with the state English Language Proficiency assessment, and learn how to interpret data and explain the results of standardized assessments to students, the students' families, and to colleagues.

EDCI 454 Secondary Mathematics Methods Practicum (1 credit)

Implementation of secondary mathematics methods, research, curricula and technology in secondary classrooms. Course will include 30 hours in grade 6-12 classrooms and 15 hours of associated scheduled activities. (Fall only)

Prereqs: EDCI 302 or Permission

Coreqs: EDCI 434

EDCI 463 Literacy Methods for Content Learning (3 credits)

Joint-listed with EDCI 563

Theory of and practical strategies for extending and reinforcing student learning of subject matter through reading and writing. Additional projects/assignments required for graduate credit. Prereqs or

Coreqs: EDCI 302 or MUST 283

EDCI 466 Literacy Assessment and Intervention (3 credits)

Various assessment issues and procedures appropriate for monitoring student progress in reading and writing in the classroom; instructional methods for assisting readers at-risk. Recommended Preparation: EDCI 320 or EDCI 463

EDCI 483 Elementary Internship I (7-14 credits)

Guided observation, supervised instruction and comprehensive team and independent teaching in school settings with a discipline-specific and integrated pedagogical focus. Graded P/F.

EDCI 485 (s) Secondary Internship (15 credits)

General Education: Senior Experience

Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings. Graded P/F. Recommended Preparation: integrated course work. Graded Pass/Fail.

Coreqs: EDCI 401 and Permission of Department

EDCI 490 Computer Science Methods (3 credits)

Joint-listed with EDCI 590

This course is designed to provide pedagogical and content knowledge and experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 491 Computer Science Methods Practicum (1 credit)

Joint-listed with EDCI 591

This course is designed to provide pedagogical and content knowledge and practical experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 498 (s) Internship (1-16 credits)

Credit arranged

EDCI 499 (s) Directed Study (1-16 credits)

Credit arranged

EDCI 500 Master's Res & Thesis (1-16 credits)

Credit arranged

EDCI 501 (s) Seminar (1-16 credits)

Credit arranged

EDCI 502 (s) Directed Study (1-16 credits)

Credit arranged

EDCI 503 (s) Workshop (1-16 credits)

Credit arranged

EDCI 504 (s) Special Topics (1-16 credits)

Credit arranged

EDCI 505 (s) Professional Development (1-16 credits)

Joint-listed with EDCI 405

Credit arranged Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward graduate degree programs, but may be used in a fifth-year program. Additional projects/assignments required for graduate credit.

EDCI 509 Math Education Seminar (1 credit, max 6)

This weekly seminar will examine current research and theory in mathematics education. Participants will read, analyze, and discuss current research and theory articles. Participants will take an active role in discussions, including leadership of seminar discussions. Pass/Fail grading only.

EDCI 511 Planning and Administering the Curriculum (3 credits)

Management skills, concepts, and information needed to administer a district-wide curriculum; audits and other evaluations as part of the curriculum or program development cycle; duties and responsibilities of curriculum developers from a standpoint of several possible roles and assignments; criteria and basic concepts for an audit, including essential curriculum management components, alignment, quality control, standards, and data sources.

EDCI 513 History of Educational Thought (3 credits)

Writings that have influenced educational theory and practice.

EDCI 516 (s) College Teaching (1-2 credits, max 2)

Techniques for effective teaching at college level.

EDCI 519 Foundations of Gifted/Talented Education (3 credits)

This course is designed to develop knowledge of the philosophy, rationale, and historical perspectives of Gifted/Talented education.

EDCI 524 Models of Teaching (3 credits)

Examination of information processing, social interaction, personal, and behavioral models of teaching; emphasis on practical implementation of these models in teaching situations.

EDCI 531 Mathematics Education (3 credits)

Students will examine relevant research and practical knowledge shared by the mathematics education community. Includes the examination of history, theoretical perspectives, student learning, and pedagogy. (Summer Only)

EDCI 535 NBPTS Certification I (1-3 credits, max arranged)

An overview of the National Board for Professional Teaching Standards (NBPTS) certification process and a framework for completion of requirements for National Board certification; gaining an understanding of the purpose of NBPTS certification by reviewing the history of the NBPTS certification process; students examine NBPTS standards and portfolio guidelines for their area of certification and receive guidance and consultation in gathering, organizing, and writing documentation required for the NBPTS portfolio.

EDCI 536 NBPTS Certification II (1-3 credits, max arranged)

Continuation of EDCI 535. Students will complete the requirements for National Board certification, submit a complete portfolio, and prepare to take the assessment center exercises.

Prereqs: EDCI 535

EDCI 543 Learning, Development, and Assessment (3 credits)

General Education: Social and Behavioral Ways of Knowing

Joint-listed with EDCI 301

This course is an exploration of theories of learning and human development and the use of this knowledge to support student success in classroom settings. It provides a practical understanding of motivation as a classroom management tool and develops a fundamental understanding of assessment terminology, the uses of assessment and its relationship to student success. Typically Offered: Fall, Spring and Summer.

EDCI 544 Teaching Culturally Diverse Learners (3 credits)

General Education: American Diversity

Joint-listed with EDCI 302

General Education: American Diversity. An examination of cultural and linguistic diversity in classrooms. Explores strategies for creating the culturally inclusive classroom that values diversity and supports student success. Examines the use of instructional planning as a tool for motivation and classroom management. Includes required field experiences. Typically Offered: Fall, Spring and Summer.

EDCI 545 Technology, Teaching and Learning (2 credits)

Joint-listed with EDCI 410

Specific methods, research, and strategies providing proficiency in relevant technology skills and practices to enhance classroom management and instruction.

EDCI 546 Language, Culture, and Power in Education (3 credits)

Examines language use within a broader sociocultural and political context, with a particular focus on the ways that language policies, language ideologies, and power issues permeate school structures and teaching practices. We will study contemporary theoretical and ethnographic approaches to the comparative study of language in its cultural context. We will interrogate "mismatch" hypothesis, which sought to explain schools' role in social reproduction as a result of incongruence in linguistic and cultural styles, in light of more contemporary studies of language, power, and the intersection of language and social process. Further, in order to understand current educational contexts and theories relevant to teaching linguistically and culturally minoritized students in U. S. public schools, we will look closely at the language resources of racially, socially, and culturally minoritized populations, specifically Latinx, African American, Native American communities in the U. S. Typically Offered: Summer.

EDCI 547 Indigenous Pedagogies (3 credits)

Introduction to Indigenous epistemologies and pedagogies for the preparation of teachers who contribute to the communal, familial and cultural vitality of Indigenous children and their families. Develops understanding of Indigenous ways of knowing and explores how Indigenous ways of knowing can inform, shape, and transform school learning. Relevant research and practitioner examples will form the basis of examining the potential and tensions for Indigenous pedagogies in schooling. The variety of vantage points presented in the readings through which Indigenous pedagogies invites the nuanced exploration of how Indigenous pedagogies are situated, and negotiated in different content areas, places/spaces, and community/school settings. Typically Offered: Summer.

EDCI 548 Introduction to ENL (3 credits)

Joint-listed with EDCI 448

In this course, students will be introduced to the evolution, research, and current federal and state legal mandates of ENL education, the processes of language acquisition and development, and the role that culture plays in students' educational experiences. The students will begin to apply Language Acquisition Theory to their lesson planning, aligning their instruction to ELD and CCSS.

EDCI 549 Second Language Teaching Methods (3 credits)

Joint-listed with EDCI 449

In this course, students will learn how to incorporate students' diverse cultural backgrounds and language proficiency levels into instructional planning that aligns with Second Language Development Standards. Students will learn how to measure the level of Language Proficiency, become familiar with the state English Language Proficiency assessment, and learn how to interpret data and explain the results of standardized assessments to students, the students' families, and to colleagues.

EDCI 550 Contexts of Education (3 credits)

Joint-listed with EDCI 201

Introduction to the philosophical, social, cultural, historical, legal and political contexts of schooling. Develops an understanding of the sources of curriculum, standards, and assessments. Explores what it means to become a successful teacher committed to student success through the development of observation and analysis skills. Requires additional 20 hours of service learning.

EDCI 556 Role of a Technology Integration Specialist (1 credit)

This is the required foundational course for those seeking a Technology Integration Specialist Certificate. The course will include the BDA coaching model and application of the International Society for Technology in Education (ISTE) Standards for Coaches, Educators, and Students.

EDCI 557 Create Instructional Videos with Screencasting (1 credit)

Learn how to record your screen and/or web cam with audio narration to create instructional videos to support learners. You will also learn to convert to YouTube so that videos are closed captioned to meet accessibility needs. Screencasts save time for teachers by enabling students to revisit content outside of class as needed and can simplify complex tasks to better support all learners.

EDCI 559 Digital Citizenship (1 credit)

Include tips for promoting and modeling digital citizenship and responsibility. You will explore multiple online resources for teaching digital citizenship skills in the classroom and assess your own digital well-being.

EDCI 561 G Suite Tools in the Classroom (1 credit)

G Suite Tools provide a way for educators to easily share content, enhance learning through collaboration and easy access to content beyond the classroom, and streamline organization. Content includes a close look at Google Docs, Forms, Sheets, and Presentations that covers collaborative uses, Google Drive, tools within each app, etc.

EDCI 563 Literacy Methods for Content Learning (3 credits)

Joint-listed with EDCI 463

Theory of and practical strategies for extending and reinforcing student learning of subject matter through reading and writing. Additional projects/assignments required for graduate credit.

Prereqs or Coreqs: EDCI 302 or MUST 283

EDCI 570 Introduction to Research in Curriculum and Instruction (3 credits)

Explorations of research foundations focused on developing skills in consuming, synthesizing and conduction research from contemporary and diverse perspectives.

EDCI 571 Google Classroom (1 credit)

Many teachers are embracing Google Classroom in an effort to increase productivity, ease sharing of digital work, and move toward a paperless classroom. Content includes everything you need to know about Google Classroom including grading and managing content within Classroom as well as creating announcements, assignments, quizzes, and assessments.

EDCI 572 Measurement and Evaluation (3 credits)

Improvement of testing, examination, and evaluation in schools; practice in making, giving, scoring, and interpreting tests; use of results in counseling.

EDCI 573 Google Tips, Tricks, and Extensions (1 credit)

You will dig deeper into everything that Google has to offer educators that you have probably never explored, including Custom Search, Doodles, Extensions, Search Tools, and a Google a Day.

EDCI 574 Improving the Use of Video in the Classroom (1 credit)

We all use videos as resources for sharing information on important content. This course will focus on tools that can help you to make videos more meaningful to students by embedding questions, using the video to create a lesson plan, etc.

EDCI 575 Integrating Technology Through the Universal Design for Learning (1 credit)

Technology is especially helpful in meeting UDL principles to remove barriers and maximize learning for all students. Content will include an overview of UDL principles and exploration of multiple tech tools to support each principle.

EDCI 576 Interactives and Simulations (1 credit)

The exploration of web-based simulations and interactives across the content areas and for specific content areas to enhance the learning experience and help increase understanding of difficult concepts. This course is especially helpful for STEM teachers.

EDCI 577 Open Educational Resources (OER) (1 credit)

Open educational resources offer a wealth of freely accessible and openly licensed quality resources for educators available in digital and text formats. We will dive into copyright, copyleft, fair use, creative commons, public domain, and the 5 Rs of openness to discover why OER is so important in today's society. You will also explore multiple online sites for finding OER to support your content area(s).

EDCI 578 Tools for Digital Assessment (1 credit)

Explore a variety of tools for assessing students in a more engaging manner inside and outside of class including Google Forms, Kahoot!, Answer Garden, Plickers, Quizlet, and Socrative.

EDCI 579 Tools to Support Collaboration In and Out of the Classroom (1 credit)

We will explore the possibilities of making collaboration more successful with Flipgrid, Padlet, and Zoom. This course includes an overview on successfully integrating each of the tools and ideas for collaborating with other classrooms or industry professionals at a distance.

EDCI 580 Tools to Support Literacy (1 credit)

There are a wide array of digital tools available to support literacy across the curriculum which offer visual aids to content, address grammar concerns, and offer ways to read text with needed support for understanding. Content will include an exploration of tools to support literacy well beyond reading skills with text simplification tools, visual dictionaries, assistive technologies, and extensions.

EDCI 581 Theoretical Foundations of Online Learning (3 credits)

This course provides an overview of theoretical issues surrounding online learning, including considerations of new technologies, socio-cultural diversity, learning theories, pedagogical approaches, and emerging trends.

Prereqs: Senior-status in teacher preparation program with sufficient GPA or Graduate-status in an education-related field

EDCI 582 Online Course Design (3 credits)

This course teaches students the course design process and provides them with opportunities to design, develop, and evaluate online course modules.

Prereqs: EDCI 581; and Senior status in teacher preparation program with sufficient GPA or Graduate status in an education-related field

EDCI 590 Computer Science Methods (3 credits)

Joint-listed with EDCI 490

This course is designed to provide pedagogical and content knowledge and experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 591 Computer Science Methods Practicum (1 credit)

Joint-listed with EDCI 491

This course is designed to provide pedagogical and content knowledge and practical experiences to be effective computer science teachers. The course will focus on helping students meet the Idaho Standards for Computer Science Teachers.

EDCI 595 Practicum in Online Learning (3 credits)

This practicum is taught in conjunction with Idaho Distance Learning Academy (IDLA) and provides students with opportunities to teach and assess K12 students in an authentic online setting.

Prereqs: EDCI 582 and Senior status in teacher preparation program with sufficient GPA or Graduate status in an education-related field

EDCI 597 (s) Practicum (1-16 credits)

Credit arranged.

EDCI 598 (s) Internship (1-16 credits)

Credit arranged Currently offered in public school teaching and college teaching. Graded P/F.

Prereqs: Permission

EDCI 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

EDCI 600 Doctoral Res & Disser (1-45 credits)

Credit arranged

EDCI 601 (s) Seminar (1-16 credits)

Credit arranged

EDCI 602 (s) Directed Study (1-16 credits)

Credit arranged

EDCI 604 (s) Special Topics (1-16 credits)

Credit arranged

Ed-Special Education (EDSP)

EDSP 200 (s) Seminar (1-16 credits)

Credit arranged

EDSP 204 (s) Special Topics (1-16 credits)

Credit arranged

EDSP 299 (s) Directed Study (1-16 credits)

Credit arranged

EDSP 300 Educating for Exceptionalities (3 credits)

Joint-listed with EDSP 520

Introduction to the education of people with disabilities, primarily in the school setting. History and foundation of special education, areas of exceptionality, instructional practices, issues and trends, and law and legislation as it applies to persons with disabilities. Graduate and undergraduate students will use the same textbook but graduate students will be required to complete an additional assignment.

EDSP 325 Supporting Student Behaviors in the Classroom (3 credits)

Emphasis on behavioral principles and their relationship to instructional strategies. Recommended Preparation: EDCI 201. Typically Offered: Summer.

EDSP 350 Language and Communication Development and Disorders (3 credits)

Overview of language, communication, and socio/emotional development and their interaction with cognitive and learning disabilities; legal and cultural issues; informal assessments and teaching strategies; models for collaboration with speech and language professionals. (Summer only)

Prereqs: EDCI 201 or ECDE 210

EDSP 390 (s) Special Education Field Experience (1-3 credits, max 3)

Supervised observation and/or instruction with students with disabilities; group discussion sessions. Graded P/F.

EDSP 400 (s) Seminar (1-16 credits)

Credit arranged

EDSP 403 (s) Workshop (1-16 credits)

Credit arranged

EDSP 404 (s) Special Topics (1-16 credits)

Credit arranged

EDSP 405 (s) Professional Development (1-16 credits)

Credit arranged. Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward graduate degree programs, but may be used in a fifth-year program. Additional projects/assignments required for graduate credit.

EDSP 423 Collaboration (3 credits)

Strategies for developing and facilitating collaboration with schools, families and community partners including methods to increase successful collaboration and inclusion, interpersonal and intrapersonal dynamics that facilitate the collaboration process, problem solving teams, and effective models of collaboration. (Spring only)

Prereqs: EDSP 300, EDSP 325, and EDSP 350

EDSP 425 Evaluation of Children and Youth (3 credits)

Assessment procedures for determining eligibility and identifying educational needs of students with disabilities, legal issues including Response to Intervention and Alternative Assessment, and current trends. (Spring only)

Prereqs: EDSP 300, EDSP 325, and EDSP 350

EDSP 426 Developing Instructional Programs (3 credits)

Overview of assumptions, current trends, legal and cultural issues; application of learning principles and strategies for curriculum development; collaborative development of Individual Education, Instruction, and Transition Plans; methods for evaluating student progress and instructional effectiveness. (Spring only)

Prereqs: EDSP 300, EDSP 325, and EDSP 350

EDSP 430 Assistive Technology and Universal Design for Learning for PreK-12 (2 credits)

Joint-listed with EDSP 530

This course is designed to introduce students to assistive technology (AT), instructional technology, and universal design for learning (UDL). Together, they provide a foundational environment in which all students, including those with disabilities, can survive and thrive in the general education setting. This course will increase participants' understanding of the relationship between instructional design and technology and prepare for successful implementation. The course will move from individualized consideration of assistive technology to a naturally supported least restrictive environment. Prereq for 430: EDSP 300, EDSP 325, and EDSP 350

EDSP 448 Special Education Curriculum (3 credits)

Joint-listed with EDSP 548

This course is designed to enable professional educators to assume leadership roles in the development and implementation of instructional programs and services for students with disabilities. Attention will be given to theoretical models, curriculum approaches, practices in developing curricula, the use of technology and assistive technology in instruction, techniques for delivering instruction in a variety of educational settings, and trends and issues in special education instruction. Prereq for 448: EDSP 300, EDSP 325, and EDSP 350

EDSP 484 (s) Special Education Internship II (1-15 credits)

Guided observation, supervised instruction, and comprehensive team and independent teaching in school settings.

Prereqs: Permission of division

Coreqs: Integrated course work and EDCI 401

EDSP 498 (s) Internship (1-16 credits)

Credit arranged

EDSP 499 (s) Directed Study (1-16 credits)

Credit arranged

EDSP 500 Master's Research and Thesis (1-16 credits)

Credit arranged

EDSP 501 (s) Seminar (1-16 credits)

Credit arranged

EDSP 502 (s) Directed Study (1-16 credits)

Credit arranged

EDSP 503 (s) Workshop (1-16 credits)

Credit arranged

EDSP 504 (s) Special Topics (1-16 credits)

Credit arranged

EDSP 505 (s) Professional Development (1-16 credits)

Credit arranged. Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward graduate degree programs, but may be used in a fifth-year program. Additional projects/assignments required for graduate credit.

EDSP 519 Orientation to Autism Spectrum Disorder (3 credits)

As the number of students with Autism Spectrum Disorders (ASD) continues to rise, all teachers need to be prepared to work with students with ASD diagnosis. This class will assist teachers in identifying students with ASD and implementing evidence based practices to foster their academic and social successes. The course will address characteristics, placement alternatives, instructional methods, curricular models, and issues applicable to the education of students with ASD. Students will also become familiarized with challenges faced by the families of people with ASD and life-span challenges. The course will also explain what ASD is and how it is defined in the Diagnostic and Statistical Manual V for the medical community. This course expands on the College of Education, Health and Human Sciences' other special education courses focusing specifically on ASD.

EDSP 520 Educating for Exceptionalities (3 credits)

Joint-listed with EDSP 300

Introduction to the education of people with disabilities, primarily in the school setting. History and foundation of special education, areas of exceptionality, instructional practices, issues and trends, and law and legislation as it applies to persons with disabilities. Graduate and undergraduate students will use the same textbook but graduate students will be required to complete an additional assignment.

EDSP 530 Assistive Technology and Universal Design for Learning for Pre-K12 (2 credits)

Joint-listed with EDSP 430

This course is designed to introduce students to assistive technology (AT), instructional technology, and universal design for learning (UDL). Together, they provide a foundational environment in which all students, including those with disabilities, can survive and thrive in the general education setting. This course will increase participants' understanding of the relationship between instructional design and technology and prepare for successful implementation. The course will move from individualized consideration of assistive technology to a naturally supported least restrictive environment. Prereq for 430: EDSP 300, EDSP 325, and EDSP 350

EDSP 531 Single Subject Design Research (3 credits)

Prepares graduate students with knowledge and experience using single subject designs. Single subject designs are quantitative approaches that use specific design features to demonstrate experimental control and internal validity of observable and quantifiable behavior most often displayed and interpreted through line graphs and charts. External validity is demonstrated through replication.

Prereqs: EDSP 540 or equivalent

EDSP 540 Behavioral Analysis for Children and Youth (3 credits)

Application of learning theory to instruction; principles of behavior analysis with application to teaching; applied research techniques, ethical, legal, and cultural issues. Completion of field work in applied setting required. (Fall only)

EDSP 548 Special Education Curriculum (3 credits)

Joint-listed with EDSP 448

This course is designed to enable professional educators to assume leadership roles in the development and implementation of instructional programs and services for students with disabilities. Attention will be given to theoretical models, curriculum approaches, practices in developing curricula, the use of technology and assistive technology in instruction, techniques for delivering instruction in a variety of educational settings, and trends and issues in special education instruction. Prereq for 448: EDSP 300, EDSP 325, and EDSP 350

EDSP 549 Language, Communication, and Social/Emotional Enhancement (3 credits)

Overview of theory and research findings; discussion of current issues, rationale, and intervention programs and strategies with an emphasis on social relations and interactions, legal mandates, and cultural issues. Includes a field component and project. (Spring only)

EDSP 552 Principles of Leadership in Neurodevelopmental Disorders (3 credits)

Students are trained to move beyond discipline boundaries to provide optimal services to child and adolescents with special health care needs. Enhance skills in evidence based practice via evaluating the validity of published research, understanding the role of outcomes-based information in decision making, and conduct meaningful, scientifically grounded research to improve systems of care to children with special healthcare needs.

EDSP 553 Principles of Leadership in Neurodevelopmental Disorders 2 (3 credits)

Students are trained to move beyond discipline boundaries to provide optimal services to child and adolescents with special health care needs. Enhance skills in evidence based practice via evaluating the validity of published research, understanding the role of outcomes-based information in decision making, and conduct meaningful, scientifically grounded research to improve systems of care to children with special healthcare needs.

EDSP 554 Principles of Leadership in Neurodevelopmental Disorders Autism Enhanced 1 (2 credits)

This course is part of the proposed doctoral course work in Special Education. This course is offered with the assistance/support of the Utah Regional Leadership in Neurodevelopmental Disabilities program (URLEND) and the University of Utah Medical School who offer some of the trainings / clinics that students enrolled in this course participate in. This course is taught in-load by faculty at the Center on Disabilities and Human Development and does not burden the college or department.

EDSP 555 Principles of Leadership in Neurodevelopmental Disorders Autism Enhanced 2 (2 credits)

Students are trained to move beyond discipline boundaries to provide optimal services to children and adolescents with special autism spectrum disorders. Students will increase their knowledge of issues related to the definition, epidemiology, and prognosis of ASD, enhance their knowledge of screening and diagnostic measures for ASD, enhance their knowledge of interventions for ASD, engage in research related to ASD, enhance their leadership skills in the area of ASD.

EDSP 597 (s) Practicum (1-16 credits)

Credit arranged

EDSP 598 (s) Internship (1-16 credits)

Credit arranged. Supervised field experience in an appropriate public or private agency.

EDSP 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

EDSP 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Education (ED)

ED 204 (s) Special Topics (1-16 credits)

Credit arranged

ED 250 EHHS Student Ambassador (1 credit, max 4)

The College of Education, Health & Human Sciences Ambassadors are a select group of students representing all departments within our college and assist the college in recruitment and retention of highly qualified students, and promotional activities. Typically Offered: Fall and Spring.

ED 299 (s) Directed Study (1 credit)

Credit arranged

ED 403 (s) Workshop (1-16 credits)

Credit arranged

ED 404 (s) Special Topics (1-16 credits)

Credit arranged

ED 405 (s) Professional Development (1-16 credits)

Credit arranged

ED 498 (s) Internship (1-16 credits)

Credit arranged

ED 499 (s) Directed Study (1-16 credits)

Credit arranged

ED 501 (s) Seminar (1-16 credits)

Credit arranged

ED 502 (s) Directed Study (1-16 credits)

Credit arranged

ED 503 (s) Workshop (1-16 credits)

Credit arranged

ED 504 (s) Special Topics (1-16 credits)

Credit arranged

ED 505 (s) Professional Development (1-16 credits)

Credit arranged

ED 533 College Teaching Apprenticeship (1-6 credits)

This class enables graduate students to gain experience in college teaching under the supervision of a faculty member.

ED 571 Introduction to Quantitative Research (3 credits)

Overview of research techniques, emphasizing experimental, quasi-experimental, descriptive, analytical, single subject designs. Special emphasis on interpreting and critically evaluating research articles; planning, analyzing, and writing quantitative research studies.

Prereqs: Graduate standing

ED 573 Action Research (3 credits)

Introduction to action research as a form of systematic applied inquiry conducted by professionals to gain insight, develop reflective perspective, effect change, enhance environment, and improve practice, pedagogy, learner/participant outcomes, policies/procedures. Goals of course include: understanding the theoretical foundations of practical and critical action research, self-study, and teacher research; examining the impact of action research on professional knowledge/actions/environment; exploring processes for identifying area of focus, generating data, analyzing and interpreting data, and developing an action plan for change.

ED 574 Introduction to Qualitative Research (3 credits)

This course reviews the foundations of qualitative design, investigating the history, philosophy, key concepts and terms, and nature of qualitative research. Examples of different types of qualitative research and assessment issues will be discussed, specifically focusing on the main qualitative traditions (case study, phenomenology, ethnography, narrative, historical, and action research). Topics will include: conceptualizing research questions, reviewing the literature, selection of appropriate design and methods of data collection, positionality, logic and coherency of research procedures/methods; interpretation of findings, establishing quality and rigor; research writing and reading, Institutional Review Board policies with respect to human subjects; and ethical issues. Students will read and evaluate qualitative research, conduct components of qualitative research, and identify methodological elements and issues. Typically Offered: Fall and Summer.

Prereqs: Permission

ED 584 Univariate Quantitative Research in Education (3 credits)

The overall goal of the course is to prepare students to apply quantitative research methodology in education. Topics include understanding applied experimental, quasi-experimental and behavioral designs, survey design, measurement and instrumentation, sampling, item analysis, reliability analysis, and validity assessment.

Prereqs: ED 571

ED 587 Multivariate Quantitative Analysis in Education (3 credits)

Analysis and application of multivariate quantitative research methods in education and social sciences. The goal of the course is to expose students to multivariate statistics and quantitative research approaches. Topics include multiple correlation/regression, discriminate analysis, exploratory and confirmatory factor analysis, multivariate analysis of variance (MANOVA), multivariate analysis of covariance (MANCOVA), canonical correlation analysis, cluster analysis, log linear model, path analysis and structural equation modeling.

Prereqs: ED 584 or Permission

ED 589 Theoretical Applications and Designs of Qualitative Research (3 credits)

This course builds and expands on ED 574 Survey of Qualitative Research and examines qualitative research designs and the use of theory in qualitative research. The course will introduce ethnography, phenomenology, case study, narrative, historical and action research designs. Each design will be explored through four overarching theoretical lenses (organizational, economic, critical, and learning), allowing students to understand the role of theory in guiding and informing research design and methods. The aim of the course is to give students the tools to conceptualize their thesis or dissertation work.

Prereqs: ED 574 or Permission

ED 590 Data Analysis and Interpretation of Qualitative Research (3 credits)

This course builds and expands on ED 589 Theoretical Applications and Design of Qualitative Research and is designed for graduate students who intend to conduct qualitative research. This course is an advanced seminar to assist in developing skills in data analysis and the presentation of qualitative research findings. It will focus on contemporary discourse among qualitative researchers concerning the analysis of qualitative data. Theoretical foundations learned in ED 574 and ED 589 will be revisited as participants examine the ways in which theory informs and guides analysis and interpretation. Assignments are designed to facilitate the interaction between data, analysis, writing, and the literature.

Prereqs: ED 574 and ED 589

ED 591 Indigenous and Decolonizing Research Methods (3 credits)

In this course, students will explore the historic and current discourse in Indigenous and Decolonizing Research. From an interdisciplinary perspective, students will analyze knowledge production through histories of Indigenous persistence and resistance to colonial power. Course content will expose students to methodologies grounded in the lived experiences and histories of individuals and communities marginalized by the colonial legacy, and will seek to engage students in research which invigorates connections, struggles, and knowledges to reflect reciprocal benefit to communities beyond the academy.

ED 592 Decolonizing, Indigenous, and Action-Based Research Methods (3 credits)

Decolonizing, Indigenous, and Action-based Research Methods are forms of social justice inquiry used to engage deeply in questions of educational equity. Through study of research, methodology, and theory, this course interrogates and contributes to current thinking on social justice issues and social justice education practices. Goals of this course include: understanding the theoretical foundations of critical and action-based theories in research, the role of reflexivity, and approaches to research as social change; examining the impact of colonization on social science and educational research; exploring the impacts of Indigenous, minoritized, and community-based epistemologies on research methodologies; developing areas of inquiry, approaches to data collection, analysis and interpretation of data, and an action plan for change.

ED 595 Survey Design for Social Science Research (3 credits)

This course focuses on the design and development of the survey instrument. Topics include how to word questions, validation, development of appropriate scales, traditional and alternative modes of survey administration; impacts of non-response; the effect of question structure, wording and context of instrument items; and post-survey follow-up and data processing. Recommended Preparation: Foundations of Research course at graduate level.

ED 598 (s) Internship (1-16 credits)

Credit arranged

ED 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

ED 600 Doctoral Research & Dissertation (1-45 credits)

Credit arranged

ED 602 (s) Directed Study (1-16 credits)

Credit arranged

ED 604 (s) Special Topics (1-16 credits)

Credit arranged

ED 611 Doctoral Seminar I (1 credit)

This seminar is intended to help facilitate a community among doctoral students and build an understanding of the processes and strategies necessary for success in the doctoral program. (Fall only)

Prereqs: Enrollment in a doctoral program

ED 612 Doctoral Seminar II (1 credit)

The seminar is intended for those doctoral students who have completed all or most of their course work. The seminar will focus on preparation for the preliminary examination and advancement to candidacy. Preparation of the dissertation proposal will also be covered. (Spring only)

Prereqs: Enrollment in a doctoral program

ED 614 EHHS Doctoral Seminar (3 credits)

The purpose of this course is to engage early to mid-program doctoral students in the fundamentals of doctoral study for their chosen degree. This includes developing an understanding of higher education/academia and industry, the organization and expectations of doctoral programs, and the exploration of the roles of teaching, research, and service. The course is intended to help students to develop collegial relationships with peers and mentors as well as to help students to adjust to their identity as members of the academic community.

Prereqs: Enrollment in a doctoral program

ED 620 Grant Writing (3 credits)

The reality in today's context is that organizations are resource challenged. Increasingly, organizations are dependent on garnering external resources to be able to successfully accomplish their missions. In this course, students are guided from developing ideas and identifying potential funding sources to the submission of proposals as well as follow-up techniques.

ED 628 Program Evaluation (3 credits)

Schools, organizations, and community agencies are being increasingly held accountable for their respective programs. This course addresses how action research can be a powerful tool for empirically evaluating all aspects of a given program.

Prereqs: ED 573

ED 668 Writing for Publication (3 credits)

Development of knowledge, skills, and potential of researchers and other writers desiring to prepare and publish manuscripts in education or other professional and trade journals; technical and theoretical aspects of writing for publication and the process of manuscript preparation, submission, and editing.

Prereqs: Enrollment in a doctoral program in Education

ED 680 Philosophical Foundations of Educational Research (3 credits)

This doctoral level course involves learners in an examination of the philosophical foundations, epistemological assumptions, and methodological frameworks of educational and social science research. Given the current acknowledgement of the importance of perspective and point of view in inquiry, readings in gender, class, and ethnic identity will be included.

Prereqs: Enrollment in a doctoral program

Educational Administration (EDAD)

EDAD 500 Master's Research and Thesis (1-16 credits)

Credit arranged

EDAD 501 (s) Seminar (1-16 credits)

Credit arranged

EDAD 502 (s) Directed Study (1-16 credits)

Credit arranged

EDAD 503 (s) Workshop (1-16 credits)

Credit arranged

EDAD 504 (s) Special Topics (1-16 credits)

Credit arranged

EDAD 505 (s) Professional Development (1-16 credits)

Credit arranged. Professional development and enrichment of certificated school personnel. Credit earned will not be accepted toward graduate degree programs, but may be used in a fifth-year program.

EDAD 509 Educational Policy and Politics for Educational Leaders (3 credits)

This course is an introduction to the complex and often contested field of politics and education. It explores the principles and problems of organization and administration of American education, including local, regional, state, and federal systems. Students examine the roles of policy making organizations by unpacking educational policymaking during the annual legislative session. Students apply their learning as they communicate with policymakers and leaders to articulate and plan implementation of a recent statute change in their district. Typically Offered: Spring.

EDAD 513 Administration of Special Education Law (3 credits)

This course is designed to provide an in-depth exploration of the legal issues related to delivery of special education and student services. The course examines current legal frameworks, including, but not limited to, case law, statutes and regulations used to address issues in this area. Typically Offered: Fall.

EDAD 528 Leading Standards Driven Instruction (3 credits)

This course explores the administrator's role as instructional leader with a focus on managing curriculum and instruction aligned to state college- and career-ready standards. Students will develop skills in program evaluation and student assessment for continuous school improvement. Skills relating to auditing curriculum, reviewing results, and making recommendations for improvement are applied. Typically Offered: Fall.

EDAD 530 Ethical Leadership and Law in Education (3 credits)

This course provides a comprehensive overview of the ethical and legal principles underpinning primary and secondary education in the U. S. and in Idaho. The course familiarizes students with statutory, regulatory, and case law focusing on Idaho, as well as general administrative and constitutional law principles affecting education. The course introduces ethical and legal problems education leaders might face, resources for making informed decisions, and how tension can be reconciled between personal and professional ethics. Typically Offered: Spring.

EDAD 533 Multicultural Diversity and Educational Leadership (3 credits)

This course focuses on what it means to lead educational organizations in a diverse society. The educational leader's role in creating an inclusive learning environment is explored. The course includes policy, theory, and practice as they relate to diverse school populations. Typically Offered: Spring.

EDAD 534 The Principalship (3 credits)

This course prepares students for assuming a leadership role in elementary or secondary school administration with emphasis on practical leadership skills. The course focuses on 1) effective school administrator knowledge and performance competencies, and 2) current best practices for effective school leadership. This course incorporates components of schools as learning organizations supporting continuous improvement, i. e. , a school system focused on student achievement; faculty, staff, administrative and board professional development; parent involvement; and community engagement. Typically Offered: Spring and Varies.

EDAD 535 School Finance (3 credits)

This course provides an overview of school finance and building-level daily funding operations. This course also examines theory and application of financing schools with an application to Idaho schools. Students will develop management skills, concepts, and information needed to develop and administer a building-level budget within a district. Typically Offered: Spring and Varies.

EDAD 570 Methods of Educational Research (3 credits)

This course focuses on: analysis of diverse types of educational research; familiarization with research resources and literature survey procedures; evaluation of educational research; implications for, and application to, educational practice. The course emphasizes scientific methods of investigation; development of competency to conduct a research study and write a research paper. Typically Offered: Fall.

EDAD 571 Educational Leadership in the Global Society (3 credits)

This course is designed to prepare students to become culturally competent school district leaders who can initiate positive growth and change. Students gain an understanding of organization development strategies that cultivate equity, diversity, and inclusion in local and global school systems. Typically Offered: Summer and Varies.

EDAD 580 Special Education Director Administration (3 credits)

This course is designed to help prepare students for assuming the role of a Special Education (SE) Director. The course emphasizes research-based and practical guidelines recommended for successful SE Administrator behavior. Typically Offered: Fall.

EDAD 584 Bargaining/Mediation/Arbitration (3 credits)

This course focuses on collective bargaining, mediation and other dispute resolution models used by school district administrators. The course emphasizes research-based and practical guidelines recommended for successful school district administration. Students learn the negotiation process, applicable laws, and facilitation techniques for communication among various stakeholder groups. Typically Offered: Varies.

EDAD 586 Advanced School Finance (3 credits)

This course focuses on budgetary matters relating to school finance including educational productivity, allocation of resources, efficiency, and equity. The course reviews basic accounting principles and addresses financial concerns that apply to both district and building levels. Prerequisite EDAD 535 School Finance or equivalent. Typically Offered: Varies.

EDAD 587 The Superintendency (3 credits)

This course is designed to help prepare students for assuming a school district administrator role. The course emphasizes research-based and practical guidelines recommended for successful district office administrators. Typically Offered: Varies.

EDAD 592 School-Community Relations (3 credits)

This course explores school and community relations with an emphasis on the social, economic, cultural, and political forces that affect how school administrators function within their communities. Students will examine policies, theories, research, and models of effective practices that inform an educational leader's role in serving as a bridge between the school and community. Students will develop skills to help facilitate enhanced understanding and communication among all school stakeholder groups. Typically Offered: Varies.

EDAD 593 School Facilities Planning and Maintenance (3 credits)

This course is designed to help school administrators and related personnel understand procedures and requirements in the planning, design, remodeling, maintenance, and financing of educational facilities. Course content includes recommendations for school facilities, emerging technology utilization and a variety of means for financing of these facilities. Students develop skills in assessing building conditions, long range facility planning, and designing of safe schools. Typically Offered: Varies.

EDAD 594 Theory in Educational Administration (3 credits)

This course introduces students to a range of leadership and organizational theories from psychology, sociology, and cultural points of views with a focus on problem solving and decision making for understanding and leading complex school organizations. Typically Offered: Summer.

EDAD 595 Administration and Supervision of Personnel (3 credits)

This course is designed to prepare school administrators for effective hiring, supervision, and evaluation of certificated and non-certificated personnel. The course emphasizes supervision and evaluation processes for improving employee performance. Students will learn application of Idaho statutes, case law, and school district policies. This course includes a laboratory component for scoring teachers' performance using the state's approved evaluation framework. Typically Offered: Fall and Summer.

EDAD 598 (s) Internship (1-16 credits)

The internship, spread over two semesters, is designed to offer a range of practical experiences and professional challenges in authentic educational settings to help prepare students for assuming roles of Principals, Superintendents, Assistant Superintendents, Directors, District Office Administration and Special Education Directors. Students create a portfolio with evidence of meeting standards required for [a specific administrator] certification.

EDAD 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation. **Prereqs:** Permission of major professor

EDAD 600 Doctoral Res & Disser (1-45 credits)

Credit arranged

EDAD 604 (s) Special Topics (1-16 credits)

Credit arranged

EDAD 698 (s) Internship (1-16 credits)

Credit arranged

Electrical & Computer Engr (ECE)

ECE 101 Foundations of Electrical and Computer Engineering (2 credits)

Introductory course for incoming students with little or no fundamental electrical/computer engineering knowledge. Includes coverage of basic analog and digital circuits. Lab assignments also included.

Coreqs: MATH 143 or MATH 170

ECE 204 (s) Special Topics (1-16 credits)

Credit arranged

ECE 210 Electrical Circuits I (3 credits)

Intro to d. c. and transient electrical circuits; mesh and nodal analysis; dependent sources; circuit theorems; transient analysis with differential equations. Three lectures and one recitation per week.

Prereqs: MATH 175 with a grade of 'C' or better

Coreqs: ECE 211, MATH 310 and PHYS 212 and PHYS 212L

ECE 211 Electrical Circuits Lab I (1 credit)

Lab to accompany ECE 210. Lab experiments and computer simulations. One 3-hour lab per week.

Coreqs: ECE 210 and PHYS 212 and PHYS 212L

ECE 212 Electrical Circuits II (3 credits)

Continuation of ECE 210. Intro to sinusoidal steady state circuits; time and frequency domain analysis; Laplace transforms; Fourier series; transfer functions; Bode plots, filters. Three lectures and one recitation per week.

Prereqs: ECE 210, MATH 310, and PHYS 212 and PHYS 212L; a grade of 'C' or better is required for all prerequisite courses

Coreqs: ECE 213

ECE 213 Electrical Circuits II Lab (1 credit)

Lab to accompany ECE 212. Continuation of ECE 211. Lab experiments and computer simulations. One 3-hour lab per week.

Prereqs: ECE 211 and PHYS 212 and PHYS 212L

Coreqs: ECE 212

ECE 240 Digital Logic (3 credits)

Number systems, truth tables, logic gates, flip-flops, combinational and synchronous sequential circuits; intro to digital systems and basic microprocessor architecture.

Prereqs: PHYS 212 and PHYS 212L

Coreqs: ECE 241

ECE 241 Logic Circuit Lab (1 credit)

Lab to accompany ECE 240.

Prereqs: PHYS 212 and PHYS 212L

Coreqs: ECE 240

ECE 292 Sophomore Seminar (0 credits)

Curriculum options, elective courses, preparation for graduate study, professional ethics, and current technical topics. Field trip may be required. Graded P/F.

ECE 299 (s) Directed Study (1-16 credits)

Credit arranged

ECE 310 Microelectronics I (3 credits)

Operational amplifier fundamentals and applications, introduction to electronic devices such as diodes, bipolar junction transistor (BJT) and metal oxide semiconductor field effect transistors (MOSFET), large and small-signal modeling of non-linear electronic devices, DC and small-signal analysis of circuits with non-linear electronic devices, biasing of electronic circuits using passive and active elements such as current mirrors, frequency response of electronic circuits, introduction to the analysis, design, and applications of electronic circuits such as rectifiers, power supplies, and low-frequency single-stage amplifiers. Practical limitations of amplifiers of electronic circuits.

Prereqs: ECE 212 and ECE 213

Coreqs: ECE 311

ECE 311 Microelectronics I Lab (1 credit)

Lab to accompany ECE 310.

Coreqs: ECE 310

ECE 319 Background Study in Electronics (3 credits)

Not applicable toward any UI undergraduate degree; valid only for removal of electronics (ECE 310) deficiency for graduate students who do not have BSEE background. See ECE 310 for description. Graded Pass/Fail based on comprehensive exam at completion of course. Graded Pass/Fail. Typically Offered: Varies.

Prereqs: Permission

ECE 320 Energy Systems I (3 credits)

Single-phase AC measurements, transformer parameters, transformer performance, rotating DC machines, DC-DC PE converters. Three lectures per week.

Prereqs: ECE 212 and PHYS 212 and PHYS 212L

Coreqs: ECE 321

ECE 321 Energy Systems I Laboratory (1 credit)

Lab to accompany ECE 320. Lab experiments and computer simulations. One 3-hour lab per week.

Prereqs: ECE 213, PHYS 212, PHYS 212L, MATH 310

Coreqs: ECE 320

ECE 329 Background Study in Energy Systems (3 credits)

Not applicable toward any UI undergraduate degree; valid only for removal of electrical machinery (ECE 320) deficiency for graduate students who do not have BSEE background. See ECE 320 for description. Graded P/F based on comprehensive exam at completion of course.

Prereqs: Permission

ECE 330 Electromagnetic Theory (3 credits)

Vector mathematics; charge and current; fields as forces; work, potential and electro-motive force; Faraday's law of induction; Gauss's and Ampere's laws; material modeling; waves in isotropic media.

Prereqs: MATH 275, MATH 310, and PHYS 212 and PHYS 212L

Coreqs: ECE 331

ECE 331 Electromagnetics Laboratory (1 credit)

Lab to accompany ECE 330. Lab experiments and computer simulations. One 3-hour lab per week.

Prereqs: MATH 275, MATH 310; PHYS 212 and PHYS 212L

Coreqs: ECE 330

ECE 340 Microcontrollers (3 credits)

Introduction to use of embedded microcontrollers and microprocessors; processor architecture; programming; use of development systems and/or emulators for system testing and debugging; software and hardware considerations of processor interfacing for I/O and memory expansion; programmed and interrupt driven I/O techniques.

Prereqs: ECE 212, ECE 213, ECE 240, ECE 241, and CS 112 or CS 120

Coreqs: ECE 341

ECE 341 Microcontrollers Lab (1 credit)

Lab to accompany ECE 340.

Coreqs: ECE 340

ECE 349 Background Study Digital Logic (3 credits)

Not applicable toward any UI undergraduate degree; valid only for removal of digital computer fundamentals (ECE 240) deficiency for graduate students. See ECE 240 for description. Graded P/F.

ECE 350 Signals and Systems I (3 credits)

Continuous and discrete, linear time invariant systems. Continuous and discrete linear time invariant systems. Differential and difference equations. Convolution integrals and sums. Fourier and Laplace transforms. Discrete time Fourier transforms and Z transforms. Emphasis on practical applications to engineering systems.

Prereqs: ECE 212 and MATH 310

Coreqs: ECE 351

ECE 351 Signals and Systems I Lab (1 credit)

Laboratory to accompany ECE 350. Software and hardware laboratories. Introduction to Matlab.

Coreqs: ECE 350

ECE 359 Background Study in Signals and Systems Analysis (3 credits)

Not applicable toward any UI undergrad degree; valid only for removal of signals and systems analysis (ECE 350) deficiency for grad students who do not have BSEE background. See ECE 350 for description. Graded Pass/Fail based on comprehensive exam at completion of course. Graded Pass/Fail. Typically Offered: Varies.

Prereqs: Permission

ECE 398 Electrical Engineering Cooperative Internship (1-3 credits, max arranged)

Supervised internship in industry in professional engineering settings, integrating academic study with work experience; requires weekly progress reports, a final written report, and a talk/presentation and additional details to be worked out with the faculty supervisor. Cannot be counted as a technical elective toward the B. S. E. E. or B. S. Comp. E. Graded P/F.

Prereqs: Permission

ECE 404 (s) Special Topics (1-16 credits)

Credit arranged

ECE 410 Microelectronics II (3 credits)

Introduction to analog integrated circuit (IC) implementation and design, differential and common-mode signal concepts, differential amplifiers, multistage amplifiers, operational amplifier design, frequency response of electronic circuits, feedback in electronic circuits, large-signal/power amplifiers, advanced current sources and mirrors, and fundamentals of analog filters.

Prereqs: ECE 310 and ECE 311; or Permission

ECE 413 Radio-Frequency IC Design (3 credits)

Joint-listed with ECE 513

Radio frequency (RF) communications concepts, integrated circuit (IC) transceiver architectures, low-noise amplifier, mixers, passive devices and matching networks, oscillators, power amplifiers, phase-locked loops, and frequency synthesizers. Additional projects/assignments are required for graduate students. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 410 or Permission

ECE 415 Analog Integrated Circuit Design (3 credits)

Joint-listed with ECE 515

Analog integrated circuit (IC) analysis, design, simulation, and layout, advanced biasing techniques, voltage references and regulators, operational amplifiers, frequency compensation techniques, noise analysis in analog circuits, and continuous-time integrated circuit filter design. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 410 or Permission

ECE 417 Mixed Signal IC Design (3 credits)

Joint-listed with ECE 517

Sample and hold (S/H) circuits, comparators, data-converter fundamentals, Nyquist-rate digital-to-analog converters (DAC) and analog-to-digital converters (ADC), over-sampling data converters, and phase-locked loops. Additional projects/assignments are required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 410 or Permission

ECE 418 Introduction to Electronic Packaging (3 credits)

Joint-listed with ECE 518

This course serves as an introduction to electronic packaging and "back-end" microelectronic processes. Topics include substrate design & fabrication, SMT & first level assembly, clean room protocol, thermal design, simulation, and process considerations. Additional project work will be required for students enrolled in ECE 518. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 310

ECE 419 Image Sensors and Systems (3 credits)

Joint-listed with ECE 516

This course introduces various concepts and fundamentals related to semiconductor image sensors. Topics cover light production and detection, video image formats, image sensor characteristics and performance metrics, basic and advanced operation principals and types of semiconductor image sensors (CCD and CMOS), noise in imagers, image and color processing, and issues related to camera system design, integration and signal processing. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 310

ECE 420 Energy Systems II (3 credits)

Three-phases, three-phase transformers, winding theory, rotating waves, steady state operation of three-phase synchronous and steady state operation of single and three-phase induction machines, and AC drives. Labs: three-phase measurements, three-phase transformers, synchronous machines, induction machines. ECE 420 cannot be counted as a graduate depth area course.

Prereqs: ECE 320 and ECE 321

ECE 421 Introduction to Power Systems (3 credits)

One line diagrams, regulating transformers, calculation of transmission line parameters, line models, Ybus, power flow, power flow studies using commercial software, contingency studies, and power system control. (Fall only)

Coreqs: ECE 420

ECE 422 Power Systems Analysis (3 credits)

Balanced and unbalanced faults, Zbus methods, transient generator models, stability analysis, fault analysis using commercial software, and introduction to power system protection. (Spring only)

Prereqs: ECE 421

ECE 427 Power Electronics (3 credits)

Characteristics, limitations, and application of solid state power devices; practical aspects of power electronic converters, including rectifiers and inverters; choppers, AC phase control, and device gating techniques. Cooperative: open to WSU degree-seeking students.

Coreqs: ECE 420

ECE 430 Microwave and Millimeter Wave Circuits (3 credits)

Telegrapher's and wave equations; characteristic impedance, wave velocity and wave number; physical transmission lines, including coax, microstrip and stripline; circuit analysis techniques, reflection coefficient and power flow; impedance analysis, impedance matching techniques and Smith Chart; S-parameters; Wilkinson power dividers, circulators and hybrid couplers; transformers and filters.

Prereqs: ECE 330 or Permission

ECE 432 Propagation of Wireless Signals (3 credits)

Maxwell's Equations, including Poynting's vector and Poynting's theorem; Wave equation with solutions, Helmholtz equation, plane waves; Reflection and refraction; Theory of guided waves, ray theory and mode theory; Atmospheric and ionospheric effects on wave propagation; Multipath effects and fading; Ground waves and surface waves. Course will be offered every third semester.

Prereqs: ECE 330 or Permission

ECE 434 Antenna Principles and Design (3 credits)

Maxwell's equations, vector potential theory, radiation patterns, antenna efficiency and bandwidth, polarization, dipole and loop antennas, line sources, patch antennas, lineal arrays, antenna systems, radar equation.

Prereqs: ECE 330 or Permission

ECE 440 Digital Systems Engineering (3 credits)

Design of digital systems using a hardware description language and field-programmable gate arrays; projects emphasize a top-down design process using software tools; topics include datapath optimization, pipelining, static and dynamic memory, technology issues, intra-system communication, and design for testability.

Prereqs: ECE 240, ECE 241, or Permission

ECE 441 Advanced Computer Architecture (3 credits)

Cross-listed with CS 451

Joint-listed with CS 551 and ECE 541

Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.

Prereqs: CS 150, STAT 301, ECE 240, or Permission

ECE 443 Distributed Processing and Control Networks (3 credits)

This course has three major parts: real-time computing, distributed processing, and control networks. Analysis of hardware and software performance with respect to speed, accuracy, and reliability. Investigation of ways of maximizing the three essential processor resources: memory, CPU time, and input/output. Methods for writing error free programs and designing fault tolerant computing systems.

Prereqs: ECE 340, ECE 341, ECE 350, and ECE 351

ECE 444 Supervisory Control and Critical Infrastructure Systems (3 credits)

Cross-listed with CS 444

Joint-listed with ECE 544 and CS 544

Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e. g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/years.)

Prereqs: Senior or Graduate standing in the College of Engineering

ECE 445 Introduction to VLSI Design (3 credits)

Principles of design of very large scale integrated circuits; CMOS logic design; transistor sizing and layout methodologies; intro to IC CAD tools.

Prereqs: ECE 310, ECE 240 or Permission.

ECE 449 Fault-Tolerant Systems (3 credits)

Cross-listed with CS 449

Joint-listed with CS 549

Design, modeling, analysis and integration of hardware and software to achieve dependable computing systems employing on-line fault tolerance; theory and fundamental concepts of designing reliable systems; analytical evaluation techniques, faults and advances in ultra-reliable distributed systems, fault-tolerant software systems; case studies include the space Shuttle, Airbus, and Boeing fly-by-wire primary flight computers as well as systems in reliable data bases and financial markets. Additional projects and assignments required for graduate credit.

Prereqs: CS 240, ECE 441, or Permission

ECE 450 Signals and Systems II (3 credits)

Continuation of ECE 350. Two-sided Laplace transform. Relationships among Fourier series, Fourier transform, and Laplace transform.

Feedback, modulation, filtering, sampling, state space analysis, and modeling of systems. Emphasis on practical applications of theory to solve engineering problems.

Prereqs: ECE 350 and MATH 330

ECE 452 Communication Systems (3 credits)

Introduction to modern communication systems; baseband pulse and data communication systems; communication channels and signal impairments; filtering and waveform shaping in the time and frequency domain; carrier-modulation for AM and FM transmission; bandpass digital and analog communication systems; comparison of system performance. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: ECE 450 and (STAT 301 or MATH 451)

ECE 455 Information and Coding Theory (3 credits)

Introduction to information theory; information content of messages; entropy and source coding; data compression; channel capacity data translation codes; fundamentals of error correcting codes; linear block and convolutional codes; introduction to trellis-coded modulation.

Prereqs: MATH 330 and STAT 301

ECE 460 Semiconductor Devices (3 credits)

Introduction to semiconductor physics and basic semiconductor devices; intro to electro-optical devices.

Prereqs: ECE 350

ECE 462 Quantum Mechanics for Electrical Engineers (3 credits)

Joint-listed with ECE 562

Fundamental theory and behavior of modern semiconductor devices. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

Prereqs: ECE 460 or Permission

ECE 465 Introduction to Microelectronics Fabrication (3 credits)

Joint-listed with ECE 565

This course serves as an introduction to the fabrication of microelectronic devices. Topics include the basics of IC structures, clean room protocol, photolithography, film growth and deposition, as well as IC interconnect technologies. Additional projects/assignments required for graduate credit.

Prereqs: ECE 310

ECE 469 Resilient Control of Critical Infrastructure (3 credits)

Joint-listed with ECE 569

This course establishes a perspective on the unique challenges of automation in our society and provides insight on how an industrial control system works and how it can fail due to threats from cyber security, human error, and complex interdependencies. It also introduces concepts from the resilient controls community that attempt to make industrial control systems more resilient to these threats. Furthermore, it provides background to the vocabulary and fundamental concepts related to the variety of disciplines required for the effective management, control, and protection of critical infrastructure. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

ECE 470 Control Systems (3 credits)

Cross-listed with ME 481

Analysis and design of feedback control systems using frequency and time domain methods, and computer-aided design tools. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 330 Prereq for Electrical Engineering and Computer Engineering majors: ECE 350 Prereq for Mechanical Engineering majors: ME 313

ECE 476 Digital Filtering (3 credits)

Design methods for recursive and non-recursive filters; frequency domain characteristics; computer-aided design; applications.

Prereqs: ECE 450

ECE 477 Digital Process Control (3 credits)

Cross-listed with CHE 445

Dynamic simulation of industrial processes and design of digital control systems. Coordinated lecture-lab periods. Recommended Preparation: CHE 444 (Recommended Preparation for EE majors: ECE 350).

ECE 480 EE Senior Design I (3 credits)

The capstone design sequence for electrical engineering majors. Course topics include design, research, simulation, and experimental methods; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i. e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.

Prereqs: ECE 240, ECE 241, ECE 310, ECE 311, ECE 320, ECE 321, ECE 330, ECE 331, ECE 340, ECE 341, ECE 350, ECE 351; or Permission

Coreqs: STAT 301

ECE 481 EE Senior Design II (3 credits)

General Education: Senior Experience

The capstone design sequence for electrical engineering majors. Course topics include design, research, simulation, and experimental methods; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i. e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.

Prereqs: ECE 480 and STAT 301 or Permission

ECE 482 Computer Engineering Senior Design I (3 credits)

The capstone design sequence for computer engineering majors. Application of formal software and hardware design techniques, hardware/software interface considerations, project management; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i. e. environmental, sustainability, manufacturability, ethical, safety, social and political considerations.

Prereqs: CS 240, CS 270, ECE 240, ECE 241, ECE 310, ECE 311, ECE 340, ECE 341, ECE 350, and ECE 351, or Permission

Coreqs: ECE 440 and STAT 301

ECE 483 Computer Engineering Senior Design II (3 credits)

General Education: Senior Experience

Gen Ed: Senior Experience The capstone design sequence for computer engineering majors. Application of formal software and hardware design techniques, hardware/software interface considerations, project management; specifications, prototyping, troubleshooting and verification; report writing, documentation and oral presentations. Topics are considered in the context of a major design project involving a team of students. Projects incorporate realistic engineering constraints; i. e. , environmental, sustainability, manufacturability, ethical, safety, social and political considerations.

Prereqs: ECE 440 and ECE 482 and STAT 301; or Permission

ECE 487 Sustainable and Renewable Energy (3 credits)

Joint-listed with ECE 587

This course will introduce technologies and characteristics for renewable and sustainable energy systems. Topics will include generation technologies, energy storage technologies and demand response concepts, including recent and future trends. Technological, economic, and policy issues for applying renewable energy technologies for grid connected and stand-alone uses will be presented. Additional projects/ assignments required for graduate credit. Typically Offered: Fall.

Prereqs: Upper division standing in Electrical or Computer Engineering

ECE 490 Near Space Engineering Leadership (1 credit, max 6)

This course is for students in the Near Space Engineering program who are in the position of Flight Director, Assistant Flight Director, Project Systems Engineer, Launch and Recovery Manager, or leading one of the four flight engineering teams. The course emphasizes important leadership skills, including communication, planning and scheduling, and delegation. Students are expected to make oral technical presentations of goals, activities, progress, and accomplishments at technical meetings and conferences, work closely with research engineers and scientists in industry and NASA, and work with other high altitude scientific ballooning and near space engineering programs throughout the State. Recommended preparation: Prior experience and concurrent enrollment in University of Idaho Near Space Engineering Program.

Prereqs: Permission

ECE 491 Senior Seminar (0 credits)

Technical topics, professional ethics, employment practice, and interviewing. One lecture per week. Graded P/F.

ECE 498 (s) Internship (1-16 credits)

Credit arranged

ECE 499 (s) Directed Study (1-16 credits)

Credit arranged

ECE 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ECE 501 (s) Seminar (1-16 credits)

Credit arranged

ECE 502 (s) Directed Study (1-16 credits)

Credit arranged

ECE 503 (s) Workshop (1-16 credits)

Credit arranged

ECE 504 (s) Special Topics (1-16 credits)

Credit arranged

ECE 505 (s) Professional Development (1-16 credits)

Credit arranged

ECE 513 Radio-Frequency IC Design (3 credits)

Joint-listed with ECE 413

Radio frequency (RF) communications concepts, integrated circuit (IC) transceiver architectures, low-noise amplifier, mixers, passive devices and matching networks, oscillators, power amplifiers, phase-locked loops, and frequency synthesizers. Additional projects/assignments are required for graduate students. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 410 or Permission

ECE 515 Analog Integrated Circuit Design (3 credits)

Joint-listed with ECE 415

Analog integrated circuit (IC) analysis, design, simulation, and layout, advanced biasing techniques, voltage references and regulators, operational amplifiers, frequency compensation techniques, noise analysis in analog circuits, and continuous-time integrated circuit filter design. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 410 or Permission

ECE 516 Image Sensors and Systems (3 credits)

Joint-listed with ECE 419

This course introduces various concepts and fundamentals related to semiconductor image sensors. Topics cover light production and detection, video image formats, image sensor characteristics and performance metrics, basic and advanced operation principals and types of semiconductor image sensors (CCD and CMOS), noise in imagers, image and color processing, and issues related to camera system design, integration and signal processing. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 310

ECE 517 Mixed Signal IC Design (3 credits)

Joint-listed with ECE 517

Sample and hold (S/H) circuits, comparators, data-converter fundamentals, Nyquist-rate digital-to-analog converters (DAC) and analog-to-digital converters (ADC), over-sampling data converters, and phase-locked loops. Additional projects/assignments are required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 410 or Permission

ECE 518 Introduction to Electronic Packaging (3 credits)

Joint-listed with ECE 418

This course serves as an introduction to electronic packaging and "back-end" microelectronic processes. Topics include substrate design & fabrication, SMT & first level assembly, clean room protocol, thermal design, simulation, and process considerations. Additional project work will be required for students enrolled in ECE 518. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 310

ECE 520 Advanced Electrical Machinery (3 credits)

Synchronous machines and transformers, machine transient and subtransient reactances, excitation and voltage regulation, power curves, transformer connections, impedance, harmonics, and impulse characteristics. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 422

ECE 522 Induction Machines (3 credits)

Winding theory, reference frame theory, induction machine models, complex vector methods, small signal analysis, induction machine capability, simulation, introduction to variable speed drives. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 350, ECE 422, or Permission

ECE 523 Symmetrical Components (3 credits)

Concepts of symmetrical components, sequence impedances of devices and lines, circuit equivalents for unbalanced faults, management during faults. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 422

ECE 524 Transients in Power Systems (3 credits)

Analysis and simulation of electromagnetic transients on electric power systems; switching transients; lightning transients; mitigation of transient overvoltages; surge protection; modeling power systems apparatus for transient studies. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 421

ECE 525 Power System Protection and Relaying (3 credits)

Power systems protection fundamentals; dynamic response of current voltage measurement devices; numerical relay fundamentals; review of symmetrical components; application of overcurrent elements, distance elements and differential elements for the real time protection and monitoring of transmission, distribution and generation apparatus.

Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 422 or Permission

ECE 526 Protection of Power Systems II (3 credits)

Protection of electrical equipment as related to electric power systems with emphasis on digital algorithms. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 525 or Permission

ECE 528 Understanding Power Quality (3 credits)

Electrical fundamentals in the context of power quality; origins and characterization of power quality problems on distribution systems; applications of standards; advanced ground techniques; case study approach to common situations.

ECE 529 Utility Applications of Power Electronics (3 credits)

HVdc transmission, static VAR compensators, FACTS devices, Custom Power devices, electrical energy storage systems, power quality, harmonic compensation, and alternative energy supply interfacing.

Prereqs: ECE 422

ECE 530 Advanced Electromagnetic Theory I (3 credits)

Maxwell's equations, potential theory, wave propagation and scattering, canonical problems, guided wave theory, antenna concepts, boundary value problems. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 432 or Permission

ECE 531 Advanced Electromagnetic Theory II (3 credits)

Boundary value problems in non-Cartesian systems, diffraction, perturbation techniques, variational techniques, wave transformations.

Prereqs: ECE 530 or Permission

ECE 533 Antenna Theory (3 credits)

Maxwell's equations, reciprocity, equivalence theorems; wire antennas, antenna arrays, aperture antennas; analysis and design techniques; hardware considerations. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 432 or Permission

ECE 539 Advanced Topics in Electromagnetics (3 credits)

Topics include computational and analytical methods, remote sensing, nonlinear optics, guided wave theory, antenna theory.

Prereqs: ECE 530 or Permission

ECE 541 Advanced Computer Architecture (3 credits)

Cross-listed with CS 551

Joint-listed with CS 451 and ECE 441

Principles and alternatives in instruction set design; processor implementation techniques, pipelining, parallel processors, memory hierarchy, and input/output; measurement of performance and cost/performance trade-off. Additional work required for graduate credit.

Prereqs: CS 150, STAT 301, ECE 240, or Permission

ECE 544 Supervisory Control and Critical Infrastructure Systems (3 credits)

Cross-listed with CS 544

Joint-listed with CS 444, ECE 444

Principles of network-based distributed real-time control and critical infrastructure systems. Integration of dedicated control protocols with wide area networks (e. g. the Internet). Issues of reliability, cost, and security. Application to selected industries, such as electric power distribution and waste and water management. Recommended preparation: ECE 340, CS 240, ME 313, CE 330, or CE 372. (Spring, alt/years.)

ECE 562 Quantum Mechanics for Electrical Engineers (3 credits)

Joint-listed with ECE 462

Fundamental theory and behavior of modern semiconductor devices. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

ECE 565 Introduction to Microelectronics Fabrication (3 credits)

Joint-listed with ECE 465

This course serves as an introduction to the fabrication of microelectronic devices. Topics include the basics of IC structures, clean room protocol, photolithography, film growth and deposition, as well as IC interconnect technologies. Additional projects/assignments required for graduate credit.

Prereqs: ECE 310

ECE 569 Resilient Control of Critical Infrastructure (3 credits)

Joint-listed with ECE 469

This course establishes a perspective on the unique challenges of automation in our society and provides insight on how an industrial control system works and how it can fail due to threats from cyber security, human error, and complex interdependencies. It also introduces concepts from the resilient controls community that attempt to make industrial control systems more resilient to these threats. Furthermore, it provides background to the vocabulary and fundamental concepts related to the variety of disciplines required for the effective management, control, and protection of critical infrastructure. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

ECE 570 Random Signals (3 credits)

Probability, random variables, and random signals in engineering systems; stochastic calculus, stationarity, ergodicity, correlation, and power spectra; propagation of random signals through linear systems; Kalman filter theory and applications. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 350, and STAT 301 or STAT 451, or Permission

ECE 572 Linear System Theory (3 credits)

Linear spaces and linear operators; descriptions of dynamic systems; input-output descriptions; state-space concepts; canonical forms; controllability and observability; minimal realizations; application to control and general systems analysis; pole assignment; observers. Cooperative: open to WSU degree-seeking students.

Prereqs: ECE 470 or equivalent

ECE 579 Engineering Acoustics (3 credits)

Cross-listed with ME 513

Joint-listed with ME 413

Fundamentals of acoustics including wave theory; transmission through layers, generation and reception; low frequency models; application to sound measurement, transducers, loudspeaker cabinet design, and nondestructive testing; acoustic design project required. Additional projects/assignments required for graduate credit. ME 513 is cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 240 or ECE 212, and MATH 310, or ME 313

ECE 587 Sustainable and Renewable Energy (3 credits)

Joint-listed with ECE 487

This course will introduce technologies and characteristics for renewable and sustainable energy systems. Topics will include generation technologies, energy storage technologies and demand response concepts, including recent and future trends. Technological, economic, and policy issues for applying renewable energy technologies for grid connected and stand-alone uses will be presented. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

ECE 588 Advanced Frequency-Domain Control (3 credits)

Advanced theory and design techniques for high-performance autonomous systems. Frequency-domain methods are presented, along with nonlinear dynamic compensation and absolute stability analysis. Emphasis placed on maximizing performance for reference tracking, disturbance rejection, and insensitivity to parameter variation. Suitable for graduate students and practicing control engineers. Applications include aerospace, power systems, electronics, and robotics problems. Typically Offered: Spring (Odd Years).

Prereqs: ECE 470/ME 481 or equivalent

ECE 589 Power Systems Planning and Operation (3 credits)

Planning and operation of electric power systems. Topics include but not limited to economic dispatch, unit commitment, optimal power flow, and state estimation. Typically Offered: Fall (Odd Years).

Prereqs: ECE 422

ECE 591 Electrical Engineering Research Colloquium (0 credits)

Weekly colloquia on topics of general interest in electrical engineering and related fields; speakers will be from UI Electrical Engineering Department, other departments on campus, WSU, the local community, and outside agencies and universities. Graded P/F.

ECE 598 (s) Cooperative Internship (1-16 credits)

Credit arranged. Supervised internship in industry in professional engineering settings, integrating academic study with work experience; requires a final written report and possible additional requirements to be worked out with the faculty supervisor.

ECE 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

ECE 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Engineering Management (EM)

EM 404 (s) Special Topics (1-16 credits)

Credit arranged

EM 502 (s) Directed Study (1-16 credits)

Credit arranged

EM 504 (s) Special Topics (1-16 credits)

Credit arranged

EM 510 Engineering Management Fundamentals (3 credits)

Fundamental principles of engineering management addressing management theory applied to the engineering environment; management processes and techniques; attitudes that facilitate the leadership role of the engineering manager in an engineering organization.

Prereqs: Instructor permission.

EM 513 Leading Technical Organizations (3 credits)

One of the four Engineering Management functions is leading: leading yourself, leading others, and leading technical organizations. This course provides background in leadership frameworks, concepts, and methods needed to succeed in leading an engineering or technical organization. Typically Offered: Fall.

Prereqs: None

EM 560 Project Risk Management (3 credits)

Application of project risk assessment tools and techniques that help increase the probability of project success. Discover different approaches used by commercial and federal agencies to identify, assess, and quantify risks and their impacts on projects.

Prereqs: Instructor Permission

EM 570 Global Product Development (3 credits)

Discussion of topics related to enabling effective global product development spanning the entire product development cycle from strategy development, through project execution, and ultimately post release product support. Rather than presenting a fixed methodology, this course will provide a framework for global development that can be adapted to specific environments.

EM 580 Technical Project Management (3 credits)

Traditional project management approaches are typically structured around the five PMBOK (Project Management Book of Knowledge) process groups. This course will introduce the PMBOK process groups but then discuss five different project management life cycle (PMLC) models to manage a project. The topics discussed are appropriate for new project managers but also for experienced project managers who are looking to increase their awareness and improve their skills in differing PMLC models.

EM 582 Advanced Topics in Project Management (3 credits)

Discussion and application of advanced project management topics beyond those prescribed by traditional project management approaches. Example topics include project portfolio management, multi-project management, use of Theory of Constraints (TOC) and Critical Chain approaches to drive improved results, and application of Agile practices. These approaches should be applicable to a wide variety of industries and functions.

Prereqs: EM 580 or Instructor Permission

EM 596 Capstone Integration (1 credit)

Capstone integration of degree material in Engineering Management and comprehensive final exam.

Prereqs: Permission

EM 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Engineering-General (ENGR)

ENGR 105 Engineering Graphics (2 credits)

Freehand and computer aided drawing in pictorial and orthographic projection; section and auxiliary views; descriptive geometry; graphical presentation of data; scales, dimensioning, and measurements. Two lectures and one 2-hour lab per week.

ENGR 123 First Year Engineering (2 credits)

Introduction to critical thinking and engineering problem solving, writing in the professional context, oral communication skills, teamwork and leadership, professionalism and work ethic. Focuses on career exploration, best practices in completing STEM homework assignments, development of a professional identity, immersion in a team-based design project with a campus client, and cultivation of life-long learning to ensure workforce success. Typically Offered: Fall.

Prereqs: None

Coreqs: MATH 108 (or higher)

ENGR 204 (s) Special Topics (1-16 credits)

Credit arranged

ENGR 205 Near Space Engineering (1 credit, max 6)

Idaho RISE (Research Involving Student Engineers and Educators) is the NASA Idaho Space Grant Consortium student high-altitude scientific balloon program at the University of Idaho. RISE is a multidisciplinary program involving students from all departments in the College of Engineering, as well as Physics, Chemistry, Life Sciences, Education, and many other departments. Students in ENGR 205 will participate in the design, development, testing, flight and flight operations, recovery, and data analysis of balloon-borne science and engineering instrumentation flown to altitudes of 100,000 feet and higher. Recommended Preparation: Interest in space, aerospace science and engineering.

ENGR 206 Near Space Engineering II (1 credit, max 6)

Idaho RISE (Research Involving Student Engineers and Educators) is the NASA Idaho Space Grant Consortium student high-altitude scientific balloon program at the University of Idaho. RISE is a multidisciplinary program involving students from all departments in the College of Engineering, as well as Physics, Chemistry, Life Sciences, Education, and many other departments. Students in ENGR 206 will participate in the design, development, testing, flight and flight operations, recovery, and data analysis of balloon-borne science and engineering instrumentation flown to altitudes of 100,000 feet and higher. Recommended Preparation: Interest in engineering, space, and aerospace sciences. (Spring only)

ENGR 210 Engineering Statics (3 credits)

Principles of statics with engineering applications; addition and resolution of forces, vector algebra, moments and couples, resultants and static equilibrium, equivalent force systems, centroids, center of gravity, free body method of analysis, two and three dimensional equilibrium, trusses, frames, and friction. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 170.

ENGR 220 Engineering Dynamics (3 credits)

Particle and rigid body kinematics and kinetics; rectilinear, curvilinear, and relative motion, equations of motion, work and energy, impulse and momentum, systems of particles, rotation, rotating axes, rigid body analysis, angular momentum, vibration, and time response. Cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 210 and MATH 175

ENGR 240 Introduction to Electrical Circuits (3 credits)

Not open for credit to electrical engineering majors. Circuit analysis, transient and steady state behavior, resonant systems, system analysis, and power and energy concepts; elementary differential equations will be introduced to solve basic transient problems.

Prereqs: MATH 175 and PHYS 211/PHYS 211L

ENGR 320 Engineering Thermodynamics and Heat Transfer (3 credits)

First and second laws of thermodynamics; thermodynamic processes; thermodynamic properties; flow processes; conversion of heat into work; conduction, convection, radiation, and heat exchangers. Recommended Preparation: ENGR 210 and MATH 310. Cooperative: open to WSU degree-seeking students.

ENGR 335 Engineering Fluid Mechanics (3 credits)

Physical properties of fluids; fluid statics; continuity, energy, momentum relationships; laminar and turbulent flow; boundary layer effects; flow in pipes, open channels, and around objects. Cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 210, MATH 275

ENGR 350 Engineering Mechanics of Materials (3 credits)

Elasticity, strength, and modes of failure of engineering materials; theory of stresses and strains for ties, shafts, beams, and columns. Cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 210, MATH 175

Coreqs: MATH 310

ENGR 360 Engineering Economy (2 credits)

Economic analysis and comparison of engineering alternatives. This class meets for 3 lectures per week for the first 10 weeks of the semester.

Prereqs: Junior standing

ENGR 398 (s) Internship (1-16 credits)

Credit arranged

ENGR 404 (s) Special Topics (1-16 credits)

Credit arranged

ENGR 428 Numerical Methods (3 credits)

Cross-listed with MATH 428 and PHYS 428

Joint-listed with MATH 529 and PHYS 528

Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications.

Prereqs: MATH 310.

ENGR 499 (s) Directed Study (1-16 credits)

Credit arranged

ENGR 504 (s) Special Topics (1-16 credits)

Credit arranged

English (ENGL)

Vertically-related courses in this subject field are: ENGL 101-ENGL 102. In addition, for English majors ENGL 215 or permission of instructor also is a prerequisite or corequisite to literature courses numbered 300 and above. Students who have completed their general education at another regionally-accredited institution, but have not completed ENGL 102, may petition the department for vertical credit if they have earned a 'C' or higher in a 300-level English course at the University of Idaho.

ENGL 101 Writing and Rhetoric I (3 credits)

General Education: Written Communication

Workshop on strategies for generating ideas for writing, for planning and organizing material, and for revising and editing; intended to prepare students for the demands of college writing, focusing on reading critically and incorporating source material. Typically Offered: Varies.

Prereqs: Appropriate placement

ENGL 101P Writing and Rhetoric I Plus (4 credits)

General Education: Written Communication

English 101 paired with a studio (lab) component. Workshop on strategies for generating ideas for writing, for planning and organizing material, and for revising and editing; intended to prepare students for the demands of college writing, focusing on reading critically and incorporating source material. This class additionally offers student-centered small-group tutorial sessions connected to the English 101 curriculum, supplemented by individualized support in the Writing Center. Typically Offered: Varies.

ENGL 102 Writing and Rhetoric II (3 credits)

General Education: Written Communication

Applied principles of expository and argumentative essay writing, including summaries, critiques, and syntheses of texts, and the research essay; emphasis on clear, concise, and vigorous prose. Graded A/B/C/N (repeat)/F.

Prereqs: ENGL 101 or Equivalent

ENGL 109 Writing Studio (1 credit)

Student-centered small-group tutorial sessions connected to the English 101 curriculum, supplemented by individualized support in the Writing Center. Graded Pass/Fail.

Coreqs: ENGL 101

ENGL 175 Literature and Ideas (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

Introduction to the terminology, techniques, and formal characteristics of literary genres. Intended to provide general students and the beginning English major with basic experience in literary analysis.

ENGL 201 English Grammar: Key Concepts and Terms (1 credit)

Study of grammar and grammatical concepts; terms and concepts drawn from traditional and transformational grammar; includes practice in sentence diagramming with connections drawn to other grammatical systems. Not an ESL course and not remedial. (Spring only).

ENGL 202 Technical Writing I (3 credits)

Introduction to the theory and practice of technical writing and its functions in workplace settings. In this rhetorically-based course, students will study and apply conventions to meet the needs of technical writing situations and begin to establish a professional identity by creating and learning how to maintain an electronic portfolio. Typically Offered: Varies.

Prereqs: ENGL 102 or equivalent.

ENGL 204 (s) Special Topics (1-16 credits)

Credit arranged

ENGL 207 (s) Persuasive Writing (3 credits)

Intermediate course in the practices of writing to persuade with special emphasis on current issues and audience awareness; includes research-based writing.

Prereqs: ENGL 102 or Equivalent

ENGL 208 (s) Personal & Exploratory Writing (3 credits)

Intermediate course in the practices of personal and exploratory writing; may include personal narrative and observation, autobiography, or extended reflection; special attention to prose style and voice; includes research-based writing.

Prereqs: ENGL 102 or Equivalent

ENGL 215 Introduction to English Studies (3 credits)

The gateway course for all English majors, focusing on goals of and opportunities opened by the various branches of English studies, the practice of close reading, critical terminology and issues central to English studies, and basic research and writing practices necessary for literary study.

Prereqs or Coreqs: ENGL 102

ENGL 231 Introduction to Screenwriting (3 credits)

Cross-listed with JAMM 231

Introduction to the elements of screenwriting; students explore narrative techniques through the study of the short film form, using genre, developing characters, and advancing a story by effectively using cinematic language. Recommended Preparation: FTV 100.

ENGL 241 Introduction to the Study of Language (3 credits)

Cross-listed with ANTH 241 and EDCI 241

Surveys of sound patterns, morphological processes, and syntactic structures; questions of language acquisition, variation, and history; exercises from a variety of languages, with emphasis on American English.

ENGL 257 Survey of Western World Literature I (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Major texts reflecting development of Western thought and culture, Classical Greece to the Renaissance. Prereqs or

Coreqs: ENGL 102

ENGL 258 Survey of Western World Literature II (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Gen Ed: Humanities 17th century to the present. Prereqs or

Coreqs: ENGL 102

ENGL 267 Survey of British Literature I (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Medieval, Renaissance, 17th Century, Restoration, and 18th Century Literature. Prereqs or

Coreqs: ENGL 102

ENGL 268 Survey of British Literature II (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Romantic, Victorian, Modern, and Contemporary literature. Prereqs or

Coreqs: ENGL 102

ENGL 277 Survey of American Literature I (3 credits)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

Indigenous beginnings to the American Civil War. Prereqs or

Coreqs: ENGL 102

ENGL 278 Survey of American Literature II (3 credits)

Gen Ed: Humanities Post-Civil War to contemporary writers.

Prereqs or Coreqs: ENGL 102

ENGL 281 Introduction to Women's Literature (3 credits)

Introduction to significant texts by women writers, with an emphasis on major social and political changes. Focus on the intersections of gender, sexuality, race, and/or class.

Prereqs: ENGL 102

ENGL 290 Introduction to Creative Writing (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Introduction to Creative Writing gives students practice closely reading and writing their own short samples of three genres of creative writing: poetry, fiction, and nonfiction. Emphasis is on the craft of writing these genres, explored through a range of sample readings and writing exercises, in both a lecture class and weekly small-group sessions. This class prepares students for any intermediate-level creative writing course.

ENGL 291 Beginning Poetry Writing (3 credits)

Introduction to techniques of writing poetry.

ENGL 292 Beginning Fiction Writing (3 credits)

Introduction to techniques of writing fiction.

ENGL 293 Beginning Nonfiction Writing (3 credits)

Introduction to techniques of writing creative nonfiction.

ENGL 298 Fugue Internship (1 credit, max 3)

An editorial internship in the evaluation and acquisition of submissions to Fugue, a national literary magazine, and a hands-on introduction to the copyediting, design, and production of a magazine and to the context of contemporary literary magazine culture. Students who have read for Fugue for at least one year may enroll in ENGL 498, the advanced internship. Graded P/F.

Prereqs: ENGL 102

ENGL 299 (s) Directed Study (1-16 credits)

Credit arranged

ENGL 309 Rhetorical Style (3 credits)

Analyze how style varies according to rhetorical genre and purpose; practice composing in multiple genres and styles.

Prereqs: ENGL 102 and Sophomore Standing

ENGL 310 Critical Theory (3 credits)

Current trends and issues in critical theory, with practice in the application of theory to a range of texts.

Prereqs: ENGL 102 and Junior standing or Instructor Permission

ENGL 313 Business Writing (3 credits)

Principles and practice of effective business communication. Projects teach conventions of tone and style appropriate to the specific discourse situation in a variety of formats, including oral, written, visual, and multimedia genres.

Prereqs: ENGL 102 or Equivalent; Sophomore standing

ENGL 316 Environmental Writing (3 credits)

Principles and practice in writing related to communicating information about scientific and environmental issues to public audiences through proposals, correspondence, and essays or reports.

Prereqs: ENGL 102 or Equivalent; Sophomore standing

ENGL 317 Technical Writing II (3 credits)

Further study of principles and practice of effective technical communication. Projects teach conventions of tone and style appropriate to the specific discourse situation in a variety of formats, including oral, written, visual, and multimedia genres. Recommended Preparation: ENGL 202. Typically Offered: Varies.

Prereqs: ENGL 102 or Equivalent; Sophomore standing.

ENGL 318 Science Writing (3 credits)

Cross-listed with JAMM 328

Principles and practices of making scientific concepts and work accessible to general audiences through multiple forms of media; also examines the ways in which media coverage of scientific issues shapes public opinion and policy.

Prereqs: ENGL 102 and Sophomore Standing

ENGL 320 Grant and Proposal Writing (3 credits)

Students will study grant writing concepts and techniques and gain practice in applying these to obtain funding for travel, research projects, and more. Typically Offered: Varies.

Prereqs: ENGL 102; Sophomore standing

ENGL 322 Climate Change Fiction (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

Study of climate change fiction (cli-fi) as an emerging genre. Focus may include fiction, nonfiction, film, and art; speculative and apocalyptic futures; and the narrative elements of scientific scenario modeling.

Typically Offered: Varies.

Prereqs: ENGL 102

ENGL 329 Literature and Film (3 credits)

Study of the relationship between literature and film with emphasis on time period, theme, culture, or genre. Typically Offered: Varies.

Prereqs: ENGL 102

ENGL 345 Shakespeare (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

Study of selected texts representative of Shakespeare's work. Typically Offered: Varies.

Prereqs: ENGL 102 Prereqs or

Coreqs: One 200-level ENGL class

ENGL 365 Gothic Literature (3 credits)

Major themes and traditions in Gothic texts. Concentrations will vary by semester and may examine historical and contemporary trends. Typically Offered: Varies.

Prereqs: ENGL 102

Prereqs or Coreqs: One 200-level ENGL class

ENGL 366 Utopian and Dystopian Literature (3 credits)

Major themes and traditions in utopian and dystopian texts.

Concentrations will vary by semester and may examine historical and contemporary trends. Typically Offered: Varies.

Prereqs: ENGL 102

Prereqs or Coreqs: One 200-level ENGL class

ENGL 380 U.S. Ethnic Literature (3 credits)

General Education: American Diversity

Significant texts, topics, and writers from U. S. ethnic groups in their literary and historical contexts, including the social and political circumstances out of which they arise. Examines texts that encourage us to ask questions about identity, power, privilege, society, and the role of culture today and in the past. Typically Offered: Fall but that varies.

Prereqs: ENGL 102

ENGL 382 Queer Literature (3 credits)

Comparative study of significant LGBTQ+ texts, topics, and writers, with emphasis on understanding the queer experience inherent in landmark works of fiction, poetry, nonfiction, and drama. Typically Offered: Varies.

Prereqs: ENGL 102

ENGL 383 African American Literature (3 credits)

Significant texts by African American writers in the historical, cultural and intellectual context of their creation, with attention to identity, power, inequality and liberation. Typically Offered: Varies.

Prereqs: ENGL 102

ENGL 384 Native American and Indigenous Literature (3 credits)

General Education: American Diversity

Cross-listed with AIST 484

Significant texts, topics and traditions of American Indian, First Nations, and Indigenous writings in their literary and historical contexts, including the social and political circumstances out of which they arise. Emphasis on North America. Typically Offered: Varies.

Prereqs: ENGL 102

ENGL 385 World Literature (3 credits)

Significant texts, topics and traditions of postcolonial cultures and diasporic communities. Typically Offered: Varies.

Prereqs: ENGL 102

ENGL 391 Intermediate Poetry Writing (3 credits, max 6)

Intermediate poetry writing workshop; emphasis on workshop approach, development of portfolio, continued reading in poetry. Typically Offered: Varies.

Prereqs: ENGL 102 and either ENGL 290 or ENGL 291; or Permission

ENGL 392 Intermediate Fiction Writing (3 credits, max 6)

Intermediate fiction writing workshop; emphasis on workshop approach, development of portfolio, continued reading in fiction. Typically Offered: Fall and Spring.

Prereqs: ENGL 102 and either ENGL 290 or ENGL 292; or Permission

ENGL 393 Intermediate Nonfiction Writing (3 credits, max 6)

Intermediate creative nonfiction; emphasis on workshop approach, development of portfolio. Typically Offered: Varies.

Prereqs: ENGL 102 and either ENGL 290 or ENGL 293; or Permission

ENGL 400 (s) Seminar in Literature and Theory (3 credits, max 6)

Specialized focus on literature and theory; topics vary per semester. Typically Offered: Varies.

Prereqs: ENGL 215

ENGL 401 Writing Workshop for Teachers (3 credits)

Enrollment limited to juniors or seniors majoring or minoring in English or in secondary or elementary education programs. Develops students' writing abilities in a workshop setting adaptable to K-12 classrooms and includes theory and practice of teaching writing in elementary and secondary schools.

Prereqs: ENGL 102

ENGL 402 Internship in Tutoring Writing (3 credits)

General Education: American Diversity

Theoretical and practical issues involved in tutoring writing; directed experience tutoring students across the disciplines. Graded P/F. Graded Pass/Fail. Typically Offered: Fall and Spring.

Prereqs: ENGL 102 or Equivalent and Permission

ENGL 404 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: ENGL 102

ENGL 408 Language Acquisition and Development (3 credits)

This course explores issues in both first and second language acquisition focusing on language structure, use and development by monolingual and bilingual children.

Prereqs: ENGL 241

ENGL 410 Studies in Linguistics (3 credits, max 12)

Joint-listed with ENGL 510

Topics such as applied linguistics, educational linguistics, language and technology, discourse analysis, or language and intercultural communication. Additional work required for graduate credit. Typically Offered: Varies.

ENGL 417 Technical Writing III (3 credits)

This course at the advanced level will build on the skills that students have acquired in previous technical writing courses. Students will study and apply advanced concepts of document organization and design, the processes of information exchange, and document specifications. Typically Offered: Varies.

Prereqs: ENGL 317

ENGL 418 Visual Perception, Culture, and Rhetoric (3 credits)

This course offers students applied practice in the skills needed to conceive, produce, interpret, and write about visual texts, texts in which images, film, and/or video play a major role in audiences' responses. In addition to teaching hands-on techniques of graphic production, the course draws on the disciplines of analytical design, cultural criticism, digital design, graphic narrative theory, creative writing, and technical writing. Typically Offered: Varies.

Prereqs: ENGL 102 or Equivalent; Sophomore standing

ENGL 419 Writing for the Web (3 credits)

Written and multimodal composition in various digital media, potentially including but not limited to blogs, microblogs, and websites.

Prereqs: At least one of the following courses: ENGL 202, ENGL 207, ENGL 208, ENGL 309, ENGL 313, ENGL 316, ENGL 317, ENGL 318, or ENGL 440. Courses in JAMM or COMM may also be accepted as prereqs or coreqs with instructor approval.

ENGL 440 Professional Writing Portfolio (3 credits)

General Education: Senior Experience

Capstone course with specialized focus in professional writing for both print and digital culture. Students will collaborate with an external partner to produce a portfolio that showcases their skills in meeting client needs. Typically Offered: Varies.

Prereqs: ENGL 102; and Senior standing or 24 credits of English courses

ENGL 444 Sociolinguistics (3 credits)

Joint-listed with ENGL 544

Introduces the study of the relationship among language, society and culture. Specific topics include (1) native and nonnative variation of English, (2) language attitudes and ideology, (3) multilingualism, and (4) social class and gender. Provides practice in the methods for collecting and analyzing sociolinguistic data. Examines educational and political implications. Additional projects required for graduate credit. (Spring, alt/years)

Prereqs: ENGL 241 or Permission

ENGL 445 Young Adult Literature (3 credits)

Major trends and traditions in Young Adult (YA) Literature. Course concentration will vary by semester and may focus on the research, theory, and practice of literature study in secondary schools and sociohistorical, sociocultural, and literary contexts.

Prereqs: ENGL 102

ENGL 447 Screenwriting (3 credits)

Cross-listed with JAMM 447, THE 447

Joint-listed with ENGL 547, THE 547

Introduction to the study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.

Prereqs: ENGL 231 or JAMM 231 or permission

ENGL 461 (s) Modern and Contemporary Poetry (3 credits, max 6)

Studies in 20th and/or 21st-century poetry. Concentrations will vary by semester and may include the study of particular aesthetic movements, international works in English translation, and historically significant texts. Typically Offered: Varies.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 462 (s) Traditions and Trends in Fiction (3 credits, max 6)

Studies in fiction, which may include short stories, flash fiction, novels, novellas, popular subgenres, and experimental forms. Concentrations will vary by semester and may include the study of particular aesthetic movements, international works in English translation, and historically significant texts. Typically Offered: Varies.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 463 (s) Life-Writing and the Essay (3 credits, max 6)

Seminar in the traditions and practices of nonfiction literature.

Concentrations will vary by semester and may concern life-writing, the essay, place study, or narrative account, or may emphasize other forms or particular periods of nonfiction. Typically Offered: Varies.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 464 (s) Literature of Oppression and Resistance (3 credits, max 6)

Significant texts by writers in communities facing various forms of oppression, with attention to representations of resistance (cultural, historical, and social). International in scope but may focus on a particular community or form of oppression. Typically Offered: Varies.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 473 Western American Literature (3 credits)

Studies in the literature and culture of the U. S. West with an emphasis on sociohistorical contexts. Focus may include the emergence of the Western as a genre, frontier narratives, Indigenous voices, and contemporary post-Western texts.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 481 (s) Women's Literature (3 credits, max 6)

Literature by women; genres, nationalities, and historical periods may vary from semester to semester. Typically Offered: Varies.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 482 (s) Major Authors (3 credits, max 6)

Comprehensive study of the works of a single author. Author varies by semester. Typically Offered: Varies.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 486 Publishing and Editing (3 credits)

Specialized focus on the dynamic world of publishing and editing. Students will develop editing skills and learn about the current state of the field. May feature visits from editors and other publishing professionals. Typically Offered: Varies.

Prereqs: ENGL 102 and one 200-level ENGL class

ENGL 487 (s) Advanced Creative Writing Techniques (3 credits, max 9)

Advanced creative writing studio with a focus each semester on the study and practice of various literary techniques across genres, which may include concentrations on imagery, narrative, characterization, scope and frame, POV, fragmentation, and lyric methods. Typically Offered: Varies.

Prereqs: ENGL 391, ENGL 392, or ENGL 393

ENGL 490 Creative & Literary Portfolio (3 credits)

General Education: Senior Experience
Capstone course with specialized focus on creative writing and literature. Students will collaborate to produce a portfolio that showcases skills learned in the major. Typically Offered: Varies.

Prereqs: ENGL 215; and senior standing

ENGL 491 Advanced Poetry Writing (3 credits, max 6)

Continuation of ENGL 391. Typically Offered: Varies.

Prereqs: ENGL 102 and ENGL 391 or Permission

ENGL 492 Advanced Fiction Writing (3 credits, max 6)

Continuation of ENGL 392. Typically Offered: Fall, Spring.

Prereqs: ENGL 102 and ENGL 392 or Permission

ENGL 493 Advanced Nonfiction Writing (3 credits, max 6)

Advanced creative nonfiction; emphasis on workshop approach. Typically Offered: Varies.

Prereqs: ENGL 102 and ENGL 393 or Permission

ENGL 496 History of the English Language (3 credits)

Evolution of the language from Proto-Germanic to American English. Recommended Preparation: ENGL 241. (Fall only)

Prereqs: ENGL 102

ENGL 497 Practicum (1-3 credits, max 6)

Supervised experience in assisting in the teaching of an English course. Graded P/F.

Prereqs: ENGL 102; and Upper-class standing and permission of instructor and director of undergraduate studies

ENGL 498 (s) Internship (1-3 credits, max 6)

Supervised experience in writing and editing. With advisor's approval, up to 3 credits of ENGL 498 may be counted toward the undergraduate English major. Graded P/F. Instructor permission required. Graded Pass/Fail. Typically Offered: Varies.

ENGL 499 (s) Directed Study (1-3 credits, max 3)

Prereqs: ENGL 102

ENGL 500 Master's Research and Thesis (1-16 credits)

Credit arranged. Graded P/F.

ENGL 501 (s) Seminar (1-16 credits)

Credit arranged

ENGL 502 (s) Directed Study (1-3 credits, max 3)

Normally offered in English and American literature and in linguistics; may not duplicate course offerings. Graded P/F.

Prereqs: Permission

ENGL 503 (s) Workshop in Creative Writing (1-16 credits)

Credit arranged. Workshop for advanced writers; analysis of theory, composition, and techniques with the goal of extending technical skills of the student writer through study of professional writers' work. All applicants must submit typed manuscripts of their work at least 10 days before registration.

Prereqs: Permission

ENGL 504 (s) Special Topics (1-16 credits)

Credit arranged

ENGL 505 (s) English Studies Professional Development (1-3 credits, max 6)

Graded P/F. Coursework designed to enhance pedagogical skills in teaching writing and literature.

Prereqs: Permission

ENGL 506 Composition Theory (3 credits)

Critical examination of theory, pedagogy, and research in composition studies.

ENGL 510 Studies in Linguistics (3 credits, max 12)

Joint-listed with ENGL 410

Topics such as applied linguistics, educational linguistics, language and technology, discourse analysis, or language and intercultural communication. Additional work required for graduate credit. Typically Offered: Varies.

ENGL 511 (s) Studies in Critical Theory (3 credits, max 12)

Various schools of critical theory, normally offered in historical survey or by theoretical perspective. (Alt/years)

Prereqs: Permission

ENGL 517 Introduction to Applied Linguistics (3 credits)

Theory and practice of comparing and contrasting linguistic systems as basis for preparing instructional materials. (Alt/years)

Prereqs: ENGL 241 or Permission

ENGL 523 Composition Pedagogy: Theory and Practice (3 credits)

Introduction to pedagogical theory, scholarship and practices essential to teaching college-level writing.

ENGL 525 (s) Studies in Environmental Humanities (3 credits, max 6)

A survey of major trends in contemporary interdisciplinary environmental humanities theory and practice, with a particular emphasis on ecological literary studies ("ecocriticism"). Typically Offered: Varies.

Prereqs: Graduate standing in the Department of English; or Permission

ENGL 544 Sociolinguistics (3 credits)

Joint-listed with ENGL 444

Introduces the study of the relationship among language, society and culture. Specific topics include (1) native and nonnative variation of English, (2) language attitudes and ideology, (3) multilingualism, and (4) social class and gender. Provides practice in the methods for collecting and analyzing sociolinguistic data. Examines educational and political implications. Additional projects required for graduate credit. (Spring, alt/years)

Prereqs: ENGL 241 or Permission

ENGL 547 Screenwriting (3 credits)

Cross-listed with THE 547

Joint-listed with ENGL 447, JAMM 447

, THE 447. Introduction to the study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.

ENGL 550 (s) Studies-19th Cent British Lit (3 credits, max 12)

Normally offered in survey of Romantic literature, survey of Victorian literature, genre studies, and major author(s).

ENGL 551 Theories of Second/Additional Language Acquisition (3 credits)

Examines how languages are learned by young adults in naturalistic and instructional settings.

ENGL 560 (s) Studies in American Literature Before 1900 (3 credits, max 12)

Normally offered in period survey, genre studies, and major author(s).
(Alt/years)

ENGL 570 (s) Studies in 20th-21st Centuries British & American Literature (3 credits, max 12)

Normally offered in period survey, genre studies, and major author(s).

ENGL 571 Traditions - Prosody and Forms (3 credits)

An in-depth study of historical and traditional prosodies and poetic forms in English, offering poets and students of poetry a better understanding of the mechanical workings of poetry, and intensive practice in critical analysis of poetic forms.

Prereqs: Graduate standing in the Department of English; or Permission

ENGL 572 Traditions - Fiction (3 credits)

An in-depth study of the short story as a literary genre, offering fiction writers a deeper historical context in which to position their own work, as well as intensive practice in the critical analysis of fiction writing craft.

Prereqs: Graduate standing in the Department of English; or Permission

ENGL 573 Traditions - Nonfiction (3 credits)

An in-depth study of the essay as a literary genre, offering nonfiction writers a deeper historical context in which to position their own work, as well as intensive practice in critical analysis of essay writing craft.

Prereqs: Graduate standing in the Department of English; or Permission

ENGL 581 Techniques of Poetry (3 credits, max arranged)

A substantial and highly analytical examination of the art and craft of poetry, from a writerly perspective.

Prereqs: Admission to the MFA in Creative Writing program or instructor permission

ENGL 582 Techniques of Fiction (3 credits, max arranged)

A substantial and highly analytical examination of the art and craft of fiction, from a writerly perspective.

Prereqs: Admission to the MFA in Creative Writing program or instructor permission

ENGL 583 Techniques of Nonfiction (3 credits, max arranged)

A substantial and highly analytical examination of the art and craft of nonfiction, from a writerly perspective.

Prereqs: Admission to the MFA in Creative Writing program or instructor permission

ENGL 591 MFA Poetry Workshop (3 credits, max arranged)

Advanced poetry writing workshop.

Prereqs: Admission to the MFA in Creative Writing program or instructor permission

ENGL 592 MFA Fiction Workshop (3 credits, max arranged)

Advanced fiction writing workshop.

Prereqs: Admission to the MFA in Creative Writing program or instructor permission

ENGL 593 MFA Nonfiction Workshop (3 credits, max arranged)

Seminar on the evolving genre of "literary non-fiction": using modes of fiction, drama, and poetry for nonfictive aims, such as memoirs or autobiography, travel narrative, and character sketch; workshop on participants' writing in the genre.

Prereqs: Admission to the MFA in Creative Writing program or instructor permission

ENGL 595 MFA Novel Workshop (3 credits, max 6)

A two-semester intensive seminar/workshop on the craft of novel writing, which includes directed writing, individual conferencing, critical analysis of exemplary novels, as well as critical response to peer work. Students will make substantial progress toward the completion of a novel of publishable quality.

Prereqs: Admission to the MFA in Creative Writing program or instructor permission

ENGL 597 (s) Practicum (1-3 credits, max 3)**ENGL 598 (s) Internship (1-16 credits, max 10)**

Credit arranged. Typically Offered: Varies.

ENGL 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Entomology (ENT)

ENT 204 (s) Special Topics (1-16 credits)

Credit arranged

ENT 299 (s) Directed Study (1-16 credits)

Credit arranged

ENT 322 General and Applied Entomology (4 credits)

Identification, biology, and importance of insects and related arthropods to humans and agriculture; basic principles of arthropod pest management. Three lectures and one 3-hour lab per week.

ENT 398 (s) Internship (1-6 credits, max 6)

Graded P/F.

Prereqs: ENT 322 or Permission

ENT 400 (s) Seminar (1-16 credits)

Credit arranged

ENT 404 (s) Special Topics (1-16 credits)

Credit arranged

ENT 411 Veterinary & Medical Entomology (3 credits)

Joint-listed with ENT 511

This course will explore why insects are such efficient disease vectors, how blood feeding evolved, the impact of insects and related arthropods and vector-borne diseases on humans and animals worldwide, and what is being done to combat the resurgence of many of these diseases.

Offered in spring semester in odd years.

Prereqs: BIOL 115 and EPPN 154 OR BIOL 250

ENT 438 Pesticides in the Environment (3 credits)

General Education: Senior Experience

Cross-listed with PLSC 438, SOIL 438

Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Recommended Preparation: CHEM 275.

ENT 440 Insect Identification (4 credits)

Joint-listed with ENT 540

Survey of approximately 200 major families; collecting and preservation techniques. For graduate credit, an additional 50 families and selected subfamilies and genera will be covered and a term paper is required. Two lectures and two 2-hour labs per week; two 1-day field trips. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: ENT 322 or Permission

ENT 441 Insect Ecology (3 credits)

Joint-listed with ENT 541

Population and community dynamics set in a systems framework; theory and applications in natural and altered systems. Requirements for graduate credit include a longer (10 vs. 5 pages), more synthetic term paper, and each 500-level student will lead a web-based or in-class discussion on a research paper of their choice. Two 1-day field trips. Recommended Preparation: General ecology. Cooperative: open to WSU degree-seeking students.

Prereqs: ENT 322 or Permission**ENT 469 Introduction to Forest Insects (2 credits)**

Roles and impacts of insects within forest ecosystems. Current management techniques of arthropod pests (insects and mites) in natural and managed forest systems. Interactions of arthropods with other agents of forest disturbance (fire and fungi). Identification of some common arthropod pests of Rocky Mountain forests.

Prereqs: FOR 221 or REM 221**ENT 476 Medical Parasitology (3 credits)**

Joint-listed with ENT 576

This course will explore the biology of eukaryotic parasites as they impact human health. Topics will include blood, gastrointestinal, and multi-organ parasites. The life cycles, clinical importance, global impact, and cutting edge research on these parasites will be reviewed. Offered in spring semester in even years.

Prereqs: EPPN 154 OR BIOL 250 and BIOL 310 or BIOL 312**ENT 499 (s) Directed Study (1-16 credits)**

Credit arranged

ENT 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ENT 501 (s) Seminar (1-16 credits)

Credit arranged

ENT 502 (s) Directed Study (1-16 credits)

Credit arranged

ENT 504 (s) Special Topics (1-16 credits)

Credit arranged

ENT 511 Veterinary & Medical Entomology (3 credits)

Joint-listed with ENT 411

This course will explore why insects are such efficient disease vectors, how blood feeding evolved, the impact of insects and related arthropods and vector-borne diseases on humans and animals worldwide, and what is being done to combat the resurgence of many of these diseases. Offered in spring semester in odd years.

ENT 540 Insect Identification (4 credits)

Joint-listed with ENT 440

Survey of approximately 200 major families; collecting and preservation techniques. For graduate credit, an additional 50 families and selected subfamilies and genera will be covered and a term paper is required. Two lectures and two 2-hour labs per week; two 1-day field trips. Cooperative: open to WSU degree-seeking students. (Alt/years)

ENT 541 Advanced Insect Ecology (3 credits)

Joint-listed with ENT 441

Population and community dynamics set in a systems framework; theory and applications in natural and altered systems. Requirements for graduate credit include a longer (10 vs. 5 pages), more synthetic term paper, and each 500-level student will lead a web-based or in-class discussion on a research paper of their choice. Two 1-day field trips. Recommended Preparation: General ecology. Cooperative: open to WSU degree-seeking students.

Prereqs: ENT 322 or Permission**ENT 549 Insect-Plant Interactions (3 credits)**

Ecology, evolution, and mechanisms of the interactions between insects and plants. Requirements for graduate credit include formal report of field study, term paper. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: ENT 322**ENT 569 Advanced Forest Entomology (3 credits)**

Methods and applications of biological and economic evaluation and control strategies of forest insect populations in relation to pest management programs. Recommended preparation: ENT 469. (Fall, alt/years)

ENT 576 Medical Parasitology (3 credits)

Joint-listed with ENT 476

This course will explore the biology of eukaryotic parasites as they impact human health. Topics will include blood, gastrointestinal, and multi-organ parasites. The life cycles, clinical importance, global impact, and cutting edge research on these parasites will be reviewed. Spring, alt/even years.

ENT 597 (s) Practicum (1-16 credits)

Credit arranged

ENT 598 (s) Internship (1-16 credits)

Credit arranged

Prereqs: ENT 322 or Permission**ENT 599 (s) Non-thesis Master's Research (1-16 credits)**

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission**ENT 600 Doctoral Research and Dissertation (1-45 credits)**

Credit arranged

Entomology, Plant Pathology, and Nematology (EPPN)

EPPN 110 Introduction to Global Disease Ecology (2 credits)

Introduction to the Global Disease Ecology major. Course will discuss research and internship opportunities, and potential career paths in human, animal, and plant health. Focus on communication, ethics, and the nature of science.

EPPN 154 Microbiology and the World Around Us (3 credits)

General Education: Natural/Integrated Science

The purpose of this introductory microbiology course is to provide students with the basic understanding of the biology of microorganisms (emphasis on prokaryotes) and their interaction and importance in the environment. Topics addressed will include the structure, function, physiology, and the functional diversity of microorganisms (bacteria, Archaea, fungi, and viruses).

EPPN 155 Microbiology and the World Around Us: Laboratory (1 credit)

General Education: Natural/Integrated Science

Introductory Microbiology Laboratory is a course designed to complement the topics covered in Microbiology and the World Around Us (EPPN 154). The laboratory experience is aimed at introducing non-science majors to the skills of scientific observation, interpretation, and logical conclusion that are the basis for hypothesis testing using basic microbial techniques as a model.

Coreqs: EPPN 154

EPPN 200 (s) Seminar (1-16 credits)

Credit Arranged.

EPPN 203 (s) Workshop (1-16 credits)

Credit arranged.

EPPN 204 (s) Special Topics (1-16 credits)

Credit arranged.

EPPN 220 Global Disease Ecology Seminar (2 credits)

Seminar leading to development of the research proposal and academic plan for the Global Disease Ecology major. The final product will be the research proposal prepared by the students and approved by their research mentor.

Prereqs: EPPN 110

EPPN 299 (s) Directed Study (1-16 credits)

Credit arranged.

EPPN 398 (s) Internship (1-16 credits)

Credit arranged.

EPPN 400 (s) Seminar (1-16 credits)

Credit arranged.

EPPN 403 (s) Workshop (1-16 credits)

Credit arranged.

EPPN 404 (s) Special Topics (1-16 credits)

Credit arranged.

EPPN 405 (s) Professional Development (1-16 credits)

Credit arranged.

EPPN 440 Research Practicum (3 credits)

Senior capstone research experience for students working toward a BS in Global Disease Ecology. Students will work one on one with a faculty mentor, or outside mentor plus a faculty co-mentor, to pursue research questions developed in EPPN 220, Global Disease Ecology Seminar.

Prereqs: EPPN 110 and EPPN 220

EPPN 500 (s) Master's Research and Thesis (1-16 credits)

Credit arranged

EPPN 501 (s) Seminar (1-16 credits)

Credit arranged.

EPPN 502 (s) Directed Study (1-16 credits)

Credit arranged.

EPPN 503 (s) Workshop (1-16 credits)

Credit arranged.

EPPN 504 (s) Special Topics (1-16 credits)

Credit arranged.

EPPN 505 (s) Professional Development (1-16 credits)

Credit arranged.

EPPN 506 Biology of Vector-borne Diseases Workshop (3 credits)

The goal of the course is to create a knowledge network for a diverse community of practitioners that applies interventions to plant, animal and human vector-borne diseases. The course fits into graduate degree programs and academic certificate programs in CALS, CNR, COS and the College of Engineering. The course features sessions on selected themes developed by instructors from different areas of expertise. The instructors will present short talks, relevant discussion questions, podcasts and case studies. Themes of the course will focus on the common biological and abiotic drivers of diseases that are carried by vectors, and will include diseases of humans, animals and plants. Typical subject areas include, but are not limited to: 1) host and pathogen biology and heterogeneity, 2) virulence and resistance mechanisms, 3) diagnostics, 4) containment, 5) disease ecology, 6) global change, 7) emergence and re-emergence of pathogens and 8) various methods of controlling disease.

Prereqs: Permission

EPPN 598 (s) Internship (1-16 credits)

Credit arranged.

EPPN 600 (s) Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Entrepreneurship (ENTR)

ENTR 204 (s) Special Topics (1-16 credits)

Credit arranged

ENTR 298 (s) Internship (1-3 credits, max 6)**ENTR 299 (s) Directed Study (1-16 credits)**

Credit arranged

ENTR 314 Startup Innovation and Ideation (1 credit)

In this course, students develop the skillset needed for the early stages of entrepreneurship by developing a common language and understanding of the process of identifying startup ideas that have real potential to enter the marketplace. Additional topics may include: an introduction to innovation, design thinking, and the process for ideation techniques to yield stronger product and service prospects. Through a combination of activities and experiential deep dives with mentors and experts, students will learn how to come up with, evaluate, and test innovations and ideas. Typically Offered: Fall.

ENTR 315 Feasibility Analysis (1 credit)

This course focuses on new venture initiation and the preparation of a feasibility study that can be used to begin operations in a new business enterprise. It examines the critical factors involved in the conception, initiation, and development of new business ventures. Students will assess the viability of a business idea to determine if the concept is feasible for business startup, expansion, or long-term growth. The student will identify and analyze through basic research the present climate to determine current trends for their business idea by completing an industry, target market and competitive analysis. Typically Offered: Fall.

ENTR 316 Business Model Design (2 credits)

Learn what works does not in innovative startups and inspiring leading-edge organizations. ENTR 316 Business Model Design will offer an engaging mix of content, case studies, student investigations, and class guests who inspire ideas and insights. To frame the issues and opportunities, we will analyze varied organizations, ask why some fall short while others grow and contribute to the people they serve. An understanding of bottlenecks, constraints, and opportunities sets the context for ongoing exploration of promising business model and social enterprise innovations. How will you create and deliver value for your customers is the operative question we will begin with and then progress to how you will extract some of that value for your organization. Business model development is essential for startups which need to discover, defend, or pivot their business models. This course introduces a structured way to think about, analyze, and develop a sound business model. Typically Offered: Fall.

ENTR 317 (s) Intellectual Property and Legal Issues for New Ventures (1 credit)

This is a course in intellectual property (IP) and legal basics for entrepreneurs. It covers what, when, who, how, and why of IP: what kinds of information can be protected, when these rights arise, who owns them, how they are enforced, and why the legal system goes to all this trouble. Areas to be discussed include trade secret, patent, copyright, trademark, false advertising, right of publicity, and design patents, as well as basic legal issues. Typically Offered: Fall.

ENTR 318 Prototype Development (1 credit)

Students will work in teams to design and build working alpha prototypes of new products. Students learn about creativity, product design, teamwork, and working within a budget in a unifying startup experience. The course is designed to emulate what engineers might experience as part of a design team in a modern product development firm. The effort spans the early phases of product development, including opportunity identification, generating ideas, gathering customer and market data, selecting ideas, devising concepts and sketch models, building and testing mockups, customer evaluation of mockups, embodiment design, and construction of a high-quality functioning alpha prototype. Typically Offered: Spring.

ENTR 319 New Venture Marketing (1 credit)

The course is about the marketing challenges in an entrepreneurial firm. Entrepreneurship is the discovery and pursuit of new business opportunities. Successful execution of an entrepreneurial idea requires a sound marketing plan and a strategy for starting and growing a successful entrepreneurial venture. In this course, students from a variety of backgrounds understand how to develop and operationalize a marketing plan for new ventures. The skills and knowledge learned will investigate how marketing tools can enable potential entrepreneurs to realize the full potential of their ideas. Typically Offered: Spring.

ENTR 320 New Venture Funding (1 credit)

Entrepreneurship is the relentless pursuit of opportunity without regard to resources currently controlled. New Venture Funding is, then, the collection of financial skills necessary to execute this difficult yet critical aspect of startup. If one is to pursue opportunity without regard to resources currently controlled, it is necessary to be able to identify attractive business opportunities, to estimate the resources necessary to undertake these opportunities, to secure such resources on favorable terms, and to prudently manage them in pursuit of the opportunity. The goal of this course is to sharpen skills in all these activities. This class focuses on one of the most compelling issues for new/small/growing/private companies: how to raise capital and serves as an overview of all the options available to successfully finance new ventures including debt financing (from venture banks, commercial banks, and SBICs) and equity financing (from angel investors, private placements, venture capitalists, and public equity markets). The course should also appeal to individuals interested in general management careers in larger companies who believe that an entrepreneurial perspective is valuable in all walks of business life. Typically Offered: Spring.

ENTR 321 Accounting for Entrepreneurs (1 credit)

At the heart of every successful startup is a certain level of financial literacy needed by founders to guide and navigate the startup from simply an idea to launch and beyond. The goal of this course is to lay the foundation for what a founder needs to know to successfully launch and scale a startup from the accountant's perspective. Typically Offered: Spring.

ENTR 322 Social Ventures (1 credit)

Social enterprises are formed to solve societal problems like hunger, illiteracy, poverty, and lack of access to health care. Business and funding models for these businesses differ radically from traditional entrepreneurial ventures. This course will introduce students to the rapidly growing field of social entrepreneurship and innovation where they will examine wide variety of approaches to solving social problems that use tools traditionally employed in business. The emphasis is on innovation, raising capital in the context of social enterprise, and developing an entrepreneurial mindset. The course also will explore the challenges of quantifying social returns from so-called double bottom line investments. Typically Offered: Spring.

ENTR 323 Launching Tech Ventures (1 credit)

ENTR 323 Launching Tech Ventures is designed for students who will start their own tech companies, those who will join early-stage startups vested in technology, or those who will seek career positions in growth stage technology firms. The course will take the perspective of founders struggling to find product-market fit in their early-stage startups. The course will have a tactical, implementation bias rather than a strategic one and will focus on finding fit in a tech venture and designing a business model for success and scaling. Typically Offered: Fall.

ENTR 398 (s) Internship (1-3 credits, max 6)**ENTR 404 (s) Special Topics (1-16 credits)**

Credit arranged

ENTR 414 Entrepreneurship (3 credits)

This course is intended to provide an overview of the entrepreneurship phenomenon and the process of identifying and commercializing an opportunity. Primary emphasis will be placed on recognizing and creating an opportunity, feasibility analysis, elements of the business plan, and sources of start-up funds. As such, this class will provide the foundation for developing a business plan for a real entrepreneurial venture in subsequent semesters.

ENTR 415 New Venture Creation (3 credits)

The primary purposes of this course are to help diverse teams of students create business plans detailing the operational and financial aspects of a proposed product innovation, and where appropriate, prepare teams to compete in the VIEW-sponsored Business Plan Competition. In order to accomplish this, students will learn how to research and effectively communicate all aspects of a typical business plan, including, but not necessarily limited to: industry analysis, competitor analysis, target marketing, sales strategy, risk assessment, legal considerations, operational plan, management and staffing plan, financial plan and executive summary. The intention is to have the class be a practical-based "laboratory" much of the time, with occasional lectures, demonstrations, guest speakers, relevant videos, and student presentations throughout the term.

Prereqs: Senior standing or Permission

ENTR 499 (s) Directed Study (1-16 credits)

Credit arranged

Environmental Science (ENVS)

ENVS 101 Introduction to Environmental Science (3 credits)

General Education: Natural/Integrated Science

Introduction to basic principles in the biological, physical, and social science areas of environmental science.

ENVS 102 Field Activities in Environmental Sciences (1 credit)

General Education: Natural/Integrated Science

Field studies for ENVS 101. Field demonstrations on waste management, water, air pollution, and the ecosystem. Field trips required. Prereqs or

Coreqs: ENVS 101

ENVS 200 (s) Seminar (1-16 credits)

Credit arranged

ENVS 201 Careers in the Environmental Sciences (3 credits)

Introduction to the wide range of interdisciplinary professions and fields of study in the environmental sciences. Includes field trips. This course is designed for ENVS majors (both traditional and transfer students) and intended to be taken during the first year at U of I.

Prereqs or Coreqs: ENVS 101 and ENVS 102

ENVS 225 (s) International Environmental Issues Seminar (3 credits)

General Education: International

Cross-listed with IS 225

Gen Ed: International Designed for individuals who have an interest in understanding environmental issues from a global perspective. The course focuses on various social and physical issues related to the environment and natural resources using human population dynamics as a backdrop. ENVS 101 recommended. (Spring only)

ENVS 299 (s) Directed Study (1-16 credits)

Credit arranged

ENVS 300 (s) Environmental Sci Seminar (1-16 credits)

Credits arranged. Junior-standing students study advanced topics in the environmental sciences using the coursework knowledge acquired in the previous two years of study. Includes numerous guest speakers, readings, and discussion, with specific preparation for the ENVS Senior Experience.

ENVS 386 Managing Complex Environmental Systems (3 credits)

Cross-listed with NRS 386

Complex environmental systems are comprised of interconnected social, economic, and environmental components. Explore complex environmental systems, frameworks and fundamental principles of sustainability in these systems by examining theory and practice in case studies. Topics may include natural resource scarcity and human conflict, ecosystem service provision, management, and conservation, and land tenure, rights, and justice relating to human access to natural resources.

ENVS 403 (s) Workshop (1-16 credits)

Credit arranged

ENVS 404 (s) Special Topics (1-16 credits)

Credit arranged

ENVS 405 (s) Professional Development (1-16 credits)

Credit arranged

ENVS 411 Data Wizardry in Environmental Sciences (3 credits)

Joint-listed with ENVS 511

Data science skills are in demand across the full spectrum of careers in the environmental sciences. This course teaches programming and data science skills in the R programming language in the context of the interdisciplinary environmental sciences. Specific topics include planning for environmental data collection and analysis, basic introduction to environmental data analysis in R, environmental data exploration using graphs in R, environmental data exploration using basic statistical approaches in R, R programming, introduction to spatial data analysis in R, environmental data visualization via interactive web applications, and management of large environmental datasets in R. This course focuses on the development of practical skills and the application of skills through project-based learning. Additional work required for graduate credit. Typically Offered: Fall.

Prereqs: STAT 251

ENVS 415 Environmental Lifecycle Assessment (3 credits)

Joint-listed with ENVS 515

Environmental life cycle assessment is the study of the environmental impacts resulting from the human production of goods and services from raw material acquisition through ultimate disposition. The class covers the basic concepts of life cycle assessment including definition of system boundaries, inventory of energy and material inputs and resultant emissions, assessment of impacts on human health and the environment, and interpretation of results. Recommended preparation: basic physical and biological sciences and familiarity with spreadsheet programs such as Excel. Additional assignment/projects required for graduate credit.

ENVS 420 Introduction to Bioregional Planning (3 credits)

Joint-listed with BIOP 520, ENVS 520

This class introduces students to bioregional planning concepts and shows the difference between "traditional" planning and bioregional planning and explores the relevance of "traditional" planning and bioregional planning for communities in the American West. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 423 Planning Sustainable Places (3 credits)

Cross-listed with BIOP 423

Joint-listed with BIOP 523, ENVS 523

This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 428 Pollution Prevention (3 credits)

Basic concepts of pollution prevention and waste minimization; pollution prevention strategies and case studies for solid waste, hazardous waste, water and energy use, and air pollution. (Fall only)

ENVS 429 Environmental Audit (3 credits)

Details on a variety of equipment and processes used by business in order to decrease generation of solid and hazardous waste. (Fall only)

ENVS 430 Planning Theory and Process (3 credits)

Joint-listed with BIOP 530, ENVS 530

Seminar provides a historical and theoretical basis to address the application of knowledge to public and political decisions and the ethics of professional practice within public and non-governmental settings. Readings, discussions, and essays focus on underlying traditions and assumptions, cultural contexts, social justice and "planner" roles. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 436 Principles of Sustainability (3 credits)

Cross-listed with FS 436

Joint-listed with ENVS 536 and FS 536

Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Cooperative: open to WSU degree-seeking students. (Fall only)

Prereqs: Junior or higher standing

ENVS 444 Water Quality in the Pacific Northwest (3 credits)

Cross-listed with SOIL 444

Joint-listed with ENVS 544 and SOIL 544

Qualitative aspects of water are covered in this class. Major topics are qualitative aspects of (1) surface water, (2) groundwater, (3) drinking water, (4) water in the oceans, and (5) the human waste stream. Concepts presented are relevant to world-wide water quality issues and concepts; however, an emphasis is placed on issues within the four Pacific Northwest states (ID, AK, OR, WA).

ENVS 448 Drinking Water and Human Health (3 credits)

Cross-listed with SOIL 448

Joint-listed with ENVS 548 and SOIL 548

Understand the characterization, testing, and treatment of chemical, microbial and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects and protection of municipal, community, and private well systems. (Spring, Alt/years)

ENVS 450 Environmental Hydrology (3 credits)

Cross-listed with SOIL 450

Comprehensive understanding of the hydrologic processes associated with the environmental processes. Includes components of the hydrologic cycle, analysis of precipitation and run off, evapotranspiration, routing, peak flow, infiltration, soil and water relationships, snowmelt, and frequency analysis. Typically Offered: Spring.

Prereqs: MATH 143 or vertically related higher course

ENVS 475 Local and Regional Environmental Planning (3 credits)

Cross-listed with NRS 475

This course focuses on environmental planning by governments, nonprofit organizations, and collaborative partnerships at the local and regional level. Students will study a variety of planning approaches, such as community visioning and policy and management tools. Topics will include planning for public health, natural areas, working landscapes, and the built environment. Typically Offered: Varies.

Prereqs: Junior or Senior standing or permission.

ENVS 476 Environmental Project Management and Decision Making (4 credits)

General Education: Senior Experience

Cross-listed with NRS 476

Integrated, interdisciplinary approaches to project and program management and decision making. Emphasis on environmental planning techniques, scenario development, analysis, and application of geospatial tools such as GIS and remote sensing. Direct experience and basic skills for project and program development and evaluation. Typically Offered: Varies.

ENVS 477 Law, Ethics, and the Environment (3 credits)

Cross-listed with AGECE 477

Examines the laws and related ethical questions pertaining to social and community-based natural resource and agroecosystem issues. Recommended Preparation: BLAW 265. Typically Offered: Varies.

Prereqs: Junior standing and NRS 235 or FOR 235

ENVS 479 Introduction to Environmental Regulations (3 credits)

Joint-listed with ENVS 579

Interpretation and implementation of local, state, and federal environmental rules; introduction to environmental regulatory process; topics include regulatory aspects of environmental impact assessment, water pollution control, air pollution control, solid and hazardous waste, resource recovery and reuse, toxic substances, pesticides, occupational safety and health, radiation, facility siting, environmental auditing and liability. Additional projects/assignments required for graduate credit. (Fall only)

ENVS 484 History of Energy (3 credits)

Covers the history of humanity's relationship to energy. Takes a historical approach beginning with ancient sources of energy, the discovery and exploitation of coal and the industrial revolution, the critical importance of oil and its derivatives, natural gas, nuclear and renewables. Finishes with a look to possible future energy sources.

ENVS 485 Energy Efficiency and Conservation (3 credits)

Includes aspects of science, policy, and economics of energy use and efficiency measures. Considers use trends and existing and potential efficiencies primarily on a national scale with some consideration of both global and local situations. Focuses on residential and transportation energy with some coverage of commercial and industrial energy use.

ENVS 497 (s) Senior Research (2-4 credits, max 4)

General Education: Senior Experience

Open only to majors in environmental science. Preparation of proposal, poster, formal presentation and written thesis or report based on research or project conducted with a faculty member. Research addresses an environmental problem using laboratory, field, or library techniques.

Prereqs: Senior standing Prereqs or

Coreqs: ENGL 316 or ENGL 317

ENVS 498 (s) Internship (1-16 credits)

Credit arranged

ENVS 499 (s) Directed Study (1-16 credits)

Credit arranged

ENVS 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ENVS 501 (s) Seminar (1-16 credits)

Credit arranged

ENVS 502 (s) Directed Study (1-16 credits)

Credit arranged

ENVS 503 (s) Workshop (1-16 credits)

Credit arranged

ENVS 504 (s) Special Topics (1-16 credits)

Credit arranged

ENVS 505 (s) Professional Development (1-16 credits)

Credit arranged

ENVS 509 Principles of Environmental Toxicology (3 credits)

Cross-listed with FS 509, SOIL 509

Joint-listed with SOIL 409

Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Graduate students are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

ENVS 511 Data Wizardry in Environmental Sciences (3 credits)

Joint-listed with ENVS 411

Data science skills are in demand across the full spectrum of careers in the environmental sciences. This course teaches programming and data science skills in the R programming language in the context of the interdisciplinary environmental sciences. Specific topics include planning for environmental data collection and analysis, basic introduction to environmental data analysis in R, environmental data exploration using graphs in R, environmental data exploration using basic statistical approaches in R, R programming, introduction to spatial data analysis in R, environmental data visualization via interactive web applications, and management of large environmental datasets in R. This course focuses on the development of practical skills and the application of skills through project-based learning. Additional work required for graduate credit. Typically Offered: Fall.

Prereqs: STAT 251

ENVS 515 Environmental Lifecycle Assessment (3 credits)

Joint-listed with ENVS 415

Environmental life cycle assessment is the study of the environmental impacts resulting from the human production of goods and services from raw material acquisition through ultimate disposition. The class covers the basic concepts of life cycle assessment including definition of system boundaries, inventory of energy and material inputs and resultant emissions, assessment of impacts on human health and the environment, and interpretation of results. Recommended preparation: basic physical and biological sciences and familiarity with spreadsheet programs such as Excel. Additional assignment/projects required for graduate credit.

ENVS 520 Introduction to Bioregional Planning (3 credits)

Cross-listed with BIOP 520

Joint-listed with ENVS 420

This class introduces students to bioregional planning concepts and shows the difference between "traditional" planning and bioregional planning and explores the relevance of "traditional" planning and bioregional planning for communities in the American West. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 523 Planning Sustainable Places (3 credits)

Cross-listed with BIOP 523

Joint-listed with BIOP 423, ENVS 423

This course discusses the concept of sustainable development and its promises and pitfalls as a leading concept for the planning and design of communities. The course provides an overview of the different interpretations of sustainability and discusses the usefulness of these interpretations for planning in the context of the communities in which we live. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 530 Planning Theory and Process (3 credits)

Cross-listed with BIOP 530

Joint-listed with ENVS 430

Seminar provides a historical and theoretical basis to address the application of knowledge to public and political decisions and the ethics of professional practice within public and non-governmental settings. Readings, discussions, and essays focus on underlying traditions and assumptions, cultural contexts, social justice and "planner" roles. Additional work required for graduate credit. Typically Offered: Varies.

ENVS 536 Principles of Sustainability (3 credits)

Cross-listed with FS 536

Joint-listed with FS 436

Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Cooperative: open to WSU degree-seeking students. (Fall only)

Prereqs: Junior or higher standing.

ENVS 541 Sampling and Analysis of Environmental Contaminants (3 credits)

Covers the sampling and analysis of environmental contaminants from a statistical perspective. Includes designing sampling plans for environmental studies, statistically analyzing environmental data, and touches on more advanced techniques such as time series analysis and censored data. (Fall only)

Prereqs: STAT 251

ENVS 544 Water Quality in the Pacific Northwest (3 credits)

Cross-listed with SOIL 544

Joint-listed with ENVS 444, SOIL 444

Qualitative aspects of water are covered in this class. Major topics are qualitative aspects of (1) surface water, (2) groundwater, (3) drinking water, (4) water in the oceans, and (5) the human waste stream. Concepts presented are relevant to world-wide water quality issues and concepts; however, an emphasis is placed on issues within the four Pacific Northwest states (ID, AK, OR, WA). Typically Offered: Fall.

ENVS 548 Drinking Water and Human Health (3 credits)

Cross-listed with SOIL 548

Joint-listed with ENVS 448 and SOIL 448

Understand the characterization, testing, and treatment of chemical, microbial and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects and protection of municipal, community, and private well systems. (Spring, Alt/years)

ENVS 551 Research Methods in the Environmental Social Sciences (3 credits)

Qualitative and quantitative social science data collection and analysis methods in the specific context of environmental research topics.

Methods include interviews, focus groups and surveys, qualitative coding and statistical analysis, research co-production, and using spatial data.

Prereqs: One course or experience in basic statistics or Instructor Permission

ENVS 552 Environmental Philosophy (3 credits)

Cross-listed with PHIL 552

Joint-listed with PHIL 452

Philosophical examination of various ethical, metaphysical, and legal issues concerning humans, nature, and the environment; issues covered may include biodiversity and species protection, animal rights, radical ecology, environmental racism, wilderness theory, population control, and property rights. Additional projects/assignments required for graduate credit.

ENVS 577 Law, Ethics, and the Environment (3 credits)

Cross-listed with AGECE 477

Examines the laws and related ethical questions pertaining to social and community-based natural resource and agroecosystem issues.

Recommended Preparation: BLAW 265. Typically Offered: Varies.

Prereqs: Junior standing and NRS 235 or FOR 235

ENVS 579 Introduction to Environmental Regulations (3 credits)

Joint-listed with ENVS 479

Interpretation and implementation of local, state, and federal environmental rules; introduction to environmental regulatory process; topics include regulatory aspects of environmental impact assessment, water pollution control, air pollution control, solid and hazardous waste, resource recovery and reuse, toxic substances, pesticides, occupational safety and health, radiation, facility siting, environmental auditing and liability. Additional projects/assignments required for graduate credit. (Fall only)

ENVS 598 (s) Internship (1-16 credits)

Credit arranged

ENVS 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

ENVS 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

ENVS 604 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: Enrollment in a Doctoral Program and Permission

Executive Master in Business Administration (EMBA)

EMBA 501 (s) Seminar (1-16 credits)

Credit arranged. Seminar.

EMBA 502 (s) Directed Study (1-16 credits)

Credit arranged. Directed Study.

EMBA 509 Team Building & Group Dynamics (1 credit)

Design and development of work groups and teams; influences, issues, and problems affecting team productivity.

EMBA 512 The External Context of Business (2 credits)

This course examines the economic, social, technological, legal, and competitive environments in which organizations operate, with emphasis on the interfaces between business, society, and the natural environment. Frameworks and tools for analyzing this complex organizational context will be introduced, with special attention given to how this context creates opportunities and risks for today's organizations.

EMBA 514 Financial Reporting and Financial Management (4 credits)

Introduction to financial accounting, financial statement analysis, and capital budgeting. Employs the tools of accounting and finance to help managers make short-term and long-term decisions. Topics include the role of financial reporting, analysis and auditing in the capital markets, long-term financing through capital structure management, and working capital management.

EMBA 516 Strategic Business Communication (1 credit)

The ability to communicate well is an essential component of effective leadership. This course develops the student's ability to communicate important organizational messages effectively to both internal and external audiences with the goal of becoming a better leader.

EMBA 517 Ethical Leadership (1 credit)

Examines the foundations of business ethics, and the challenges of ethical decision making and leadership in an environment of globalization and change.

EMBA 521 Strategy Formulation and Execution (2 credits)

This course explores concepts, tools and frameworks that the student can use to develop and implement effective business level strategies. The course examines what strategy is and considers in detail how an organization builds a sustainable competitive advantage. The course also examines the keys to successfully implementing strategy in an integrated fashion across the entire organization.

Prereqs: EMBA 512

EMBA 522 Marketing Management and Innovation (2 credits)

Explores the market orientation framework that needs to be created in order to promote innovation, including aspects of marketing and innovation capabilities, marketing strategy and processes, as well as specific marketing programs and decisions.

EMBA 524 Strategic Cost and Process Management (3 credits)

This course examines the concepts and tools needed for systematically designing, evaluating, and improving business processes to better achieve organizational objectives and for understanding and managing the costs associated with these processes and the products and services resulting from them.

EMBA 525 Managing Relationships to Influence Behavior (2 credits)

Principles of developing and maintaining exchange relationships. Application of the principles to the practice of managing relationships between the organization and two key stakeholder groups: employees and customers.

EMBA 531 Crisis Communication (1 credit)

Crises are a part of organizational life that require effective communication to internal and external stakeholders. This course addresses the elements of crisis communication planning and management as well as developing communication tactics for a range of audiences.

Prereqs: EMBA 516

EMBA 533 Lean Startup & Product Launch (2 credits)

Provides insight into the key tools and steps needed to build a successful startup. The key idea in this course is learning how to rapidly develop and test ideas by gathering customer and marketplace feedback.

Prereqs: EMBA 522

EMBA 534 Leading Strategic Change (1 credit)

This course prepares the student to lead strategic change within their organization by examining both the processes needed to bring about effective strategic change as well as the individual leadership abilities needed to lead these change efforts. The course also examines how to build adaptable and agile organizations that are predisposed to embrace (rather than resist) change. The course considers change primarily from the perspective of the organization's executive leadership team, but also explores how mid-level managers can lead strategic change initiatives within an organization.

EMBA 535 Decision Analytics (3 credits)

Managers need to make timely and effective decisions, and data drives decisions. This course examines the behavioral and strategic aspects of decision making under uncertainty and risk, and under conditions of small and large data flows. Students will develop a multi-disciplinary toolkit that will help to manage the risk in decision making, improve an organization's effectiveness, and gain competitive advantage.

EMBA 542 Negotiation and Conflict Management (2 credits)

This course examines the concepts and theories that underpin effective negotiation and conflict resolution. It emphasizes practical application of theory through selected readings and a series of simulations. The course will develop students' negotiation and conflict resolution skills so that they can more effectively negotiate positive outcomes for themselves and their organizations.

Prereqs: EMBA 535

EMBA 543 Assessing to Improve Firm Performance (1 credit)

Identifying, measuring, and evaluating performance criteria throughout the organization from multiple perspectives using quantitative and qualitative methods.

EMBA 545 Capstone Integrative Analysis (1-3 credits, max 3)

Students, working in consultation with a faculty mentor, design and complete a customized project that applies and integrates concepts from across multiple EMBA courses to achieve advanced learning in an area of particular interest or need of the student. Projects can be related to the student's organizational responsibilities, but do not have to be.

Prereqs: EMBA 509, EMBA 512, EMBA 514, EMBA 516, EMBA 517, EMBA 521, EMBA 524, EMBA 525, and EMBA 522

EMBA 546 Managing for Your Future (1 credit)

A personal perspective on the lessons learned in the EMBA program that pivots to a future-oriented examination of several sets of ideas about developing personal and professional effectiveness.

EMBA 599 (s) Non-thesis Master's Research (1-3 credits, max 6)

Research not directly related to a thesis or dissertation.

Prereqs: Permission

Family and Consumer Sciences (FCS)

FCS 200 (s) Seminar (1-16 credits)

Credit arranged

FCS 203 (s) Workshop (1-16 credits)

Credit arranged

FCS 204 (s) Special Topics (1-16 credits)

Credit arranged

FCS 251 Survey of FCS Professions (1 credit)

Web delivered, survey course for students considering a career in Family and Consumer Sciences, particularly teaching. Televised interviews with professionals in a variety of FCS careers, and an in-depth look at teaching as a career. An advising meeting with the FCS Teacher Educator is required to explain the requirements of the program.

FCS 299 (s) Directed Study (1-16 credits)

Credit arranged

FCS 301 Professional Skills in Dietetics I (1 credit)

Development of professional skills for CPD students including leadership skills, communication techniques, involvement in professional organizations, and promotion of foods and nutrition. Students will create a professional development portfolio. (Fall only)

Prereqs: FN 270 and Junior standing in the Food and Nutrition Coordinated Program in Dietetics Option.

FCS 305 Nutrition Related to Fitness and Sport (2 credits)

Identification of energy, macro/micro nutrient and fluid requirements during exercise; evaluation of dietary regimens and ergogenic aids for pre and post competition, weight maintenance, and wellness. (Fall only)

Prereqs: Family and Consumer Sciences major or Movement Sciences major or Permission

FCS 346 Personal and Family Finance and Management (4 credits)

Principles and procedures of individual and family management and their relationship to human and economic resources; applications of management principles to spending, saving, borrowing, and investing decisions. (Spring only)

FCS 363 Medical Nutrition Therapy (4 credits)

Diet modification for adult and child needs in disease and convalescence. Clinical experience in Spokane hospitals. (Fall only)

Prereqs: Senior standing in CPD

FCS 364 Clinical Dietetics I (4 credits)

Clinical experience and simulations preparing students for entry into hospital rotations in Idaho/Washington hospitals. (Fall only)

Prereqs: Senior standing in CPD

FCS 365 Advanced Nutrition Lab (1 credit)

Lab to accompany FN 415 for students accepted into CPD program only. One 2-hour lab per week. (Fall only)

Prereqs: CPD major, FN 205, BIOL 227 and BIOL 228, BIOL 300

FCS 375 Recipe Development and Culinary Exploration (3 credits)**FCS 387 Food Systems Management (3 credits)**

Institutional organization and management; supervised practice in food service. Three lectures per week. (Spring only)

Prereqs: Permission

FCS 388 Intro Dietetics Supervised Practice II (1 credit)

CPD supervised practice experience including introductory clinical, community, and food service management activities and facility rotations. One 3-hour lab per week. (Spring only)

Coreqs: FCS 387

FCS 398 (s) Internship (1-16 credits)

Credit arranged

FCS 400 (s) Seminar (1-16 credits)

Credit arranged

FCS 403 (s) Workshop (1-16 credits)

Credit arranged

FCS 404 (s) Special Topics (1-16 credits)

Credit arranged

FCS 405 (s) Professional Development (1-16 credits)

Credit arranged

FCS 428 Housing America's Families (3 credits)

Housing, furnishings, and equipment as they influence family well-being, and families' housing choices as affected by social, psychological, economic, technological, and political factors. Four-five 2-hour field trips. (Spring only)

FCS 446 Financial Counseling and Debt Management (3 credits)

Course content includes an examination of financial counseling and debt management with individuals and families. Topics include principles of financial counseling, budgets, financial statements, credit, debt, collection policies and practices, mortgages, foreclosures, and bankruptcy. After completion, students are eligible to take a national exam towards becoming an Accredited Financial Counselor. Recommended Preparation: FCS 346. (Fall only)

FCS 448 Consumer Economic Issues (3 credits)

Consumer economic issues, including consumers in the marketplace, the consumer movement, rights and remedies, advocacy, public policy, decision making, buying, credit, banking, insurance, clothing, health care, food, housing, and investments. (Fall only)

Prereqs: ECON 201, ECON 202, ECON 272 or HDFS 105; or Permission

FCS 472 Clinical Dietetics II (8 credits)

Continuation of FCS 364. Supervised practice in Washington/Idaho hospitals. (Spring only)

Prereqs: FCS 364, Senior standing in CPD

FCS 487 Community Nutrition Supervised Practice (4 credits)

Community nutrition supervised practice experience in WIC, Child Nutrition, wellness facilities, public health, etc.

Prereqs: FN 305 and Senior standing in CPD

Coreqs: FN 491 and FN 305

FCS 488 Management Supervised Practice II (8 credits)

Supervised practice with dietitians and employees in school and hospital food service settings in Idaho or Washington.

Prereqs: FCS 387 and Senior Standing in CPD

FCS 496 Internship:Fashion Business (2-8 credits, max 8)

Supervised experience in fashion business: fashion design, textile/apparel manufacturing, retailing, merchandising; geared to career goals of student. Graded P/F.

Prereqs: Apparel, Textiles and Design major.

FCS 498 (s) Internship (3-9 credits, max 9)

Supervised internship in education institutions, governmental/social agencies, hospitals, business, or industry; geared to the professional goals of students.

Prereqs: Permission

FCS 499 (s) Directed Study (1-16 credits)

Credit arranged

FCS 500 Master's Research and Thesis (1-16 credits)

Credit arranged

FCS 501 (s) Seminar (1-16 credits)

Credit arranged

FCS 502 (s) Directed Study (1-16 credits)

Credit arranged

FCS 503 (s) Workshop (1-16 credits)

Credit arranged

FCS 504 (s) Special Topics (1-16 credits)

Credit arranged

FCS 505 (s) Professional Development (1-16 credits)

Credit arranged

FCS 509 Nutrition and Dietetics Professional Skills (1 credit)

Prepares dietetic students to assume professional responsibilities to provide safe, ethical, and effective nutrition services and to use effective communication, collaboration, and advocacy skills.

FCS 590 Intellectual Foundations in Family and Consumer Sciences (3 credits)

Overview of historical perspectives of family and consumer sciences profession; explanation and application of alternative modes of inquiry in family and consumer sciences research.

FCS 591 Single-Subject Research Design for Social Sciences (3 credits)

This is a course that will focus on applications and interpretations of single subject research designs and the analysis of human behavior in educational and community settings. It will cover several topics such as method designs, behavioral measurements, data analyses, and writing research proposals. Typically Offered: Varies.

FCS 598 (s) Internship (1-16 credits)

Credit arranged. Supervised internship in educational institutions, governmental/social agencies, hospitals, or industry; geared to the educational and vocational goals of students.

FCS 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

FCS 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Film and Television Studies (FTV)

Vertically-related courses in this subject field are: FTV 122 - JAMM 122 - JAMM 275.

FTV 100 Film History and Aesthetics (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Introduction to the historical development of film as an audio-visual art form with an emphasis on the aesthetic techniques used to tell cinematic stories. Explores how historical film styles, industrial contexts, and diverse cultural influences have led to contemporary aesthetic conventions in film and television. Typically Offered: Varies.

FTV 122 Audio-Video Foundations (3 credits)

Introduction to equipment, software, and storytelling strategies for audio-video media production. Typically Offered: Spring and Varies.

Prereqs: FTV 100 with a grade of C or better

FTV 200 Global Film Styles (3 credits)

General Education: International

Introduction to global styles, genres, and movements for film and television after WWII. Explores how historical styles and genres inform contemporary film and television. Typically Offered: Varies.

FTV 395 Film Crew (1 credit, max 2)

Practical experience working as a member of a film crew assisting with production of senior capstone films. Graded pass/fail.

Prereqs: Permission

FTV 425 Directing for the Screen (3 credits)

Run in collaboration with THE 425: BFA Actors Studio. Introduces students to the fundamentals of directing actors for the screen. Students learn technical skills for film lighting, sound, and camera while developing a set of techniques and practices for effectively directing actors, producing, and sharing creative work. Typically Offered: Varies.

Prereqs: ENGL 231 and JAMM 374

FTV 475 Advanced Filmmaking I (3 credits)

Advanced pre-production and content development for short narrative cinema. Emphasis on professional development and exploring the art and business of filmmaking: technical, creative, and aesthetic choices as well as economics, logistics, and intellectual property laws and licensing. Typically Offered: unknown.

Prereqs: JAMM 275 and JAMM 374; or Permission

FTV 476 Advanced Filmmaking II (3 credits)

Continues advanced production and content development for short narrative cinema. Emphasis on criticism, revision, and artistic realization. Typically Offered: unknown.

Prereqs: FTV 475

Finance (FIN)

FIN 204 (s) Special Topics (1-16 credits)

Credit arranged

FIN 260 Student Investment Fund Mgmt (1 credit, max arranged)

Open only to freshman and sophomore students participating in the A. D. and J. E. Davis Student Investment Program. "Hands on" experience in investment management; students manage a funded portfolio in terms of establishing objectives, security selection, asset allocation, and portfolio performance. May meet concurrently with FIN 460. Graded P/F. May involve field trips.

Prereqs: Permission

FIN 298 (s) Internship (1-3 credits, max 6)**FIN 299 (s) Directed Study (1-16 credits)**

Credit arranged

FIN 301 Financial Resources Management (3 credits)

This course examines the policies and practices involved in the allocation of financial resources in business organizations; develops the tools needed to use financial data for analysis and financial decision making. May involve evening exams.

Prereqs: ACCT 201; ECON 202 or ECON 272

FIN 302 Intermediate Financial Management (3 credits)

An intermediate-level course in managerial finance that addresses more complex issues such as risk in capital budgeting, working capital management, mergers, business failure and reorganization, and lease financing. May involve evening exams.

Prereqs: FIN 301; ACCT 202; ECON 201 or ECON 272; MATH 160 or MATH 170; STAT 251 or STAT 301

FIN 322 Insurance (2 credits)

This course covers insurance from a personal and a business perspective. Students will learn about property, liability, casualty, home, health, and long-term care insurance. The course will develop an understanding of the products and their purposes, as well as a general understanding of the distribution system for insurance products, focusing on retail insurance providers. Students will learn to match insurance products with specific insurable risks and how to market those products. The course will also provide an overview of the claims process. Typically Offered: Fall, Spring.

FIN 323 Commercial Finance (1 credit)

This course examines the different methods of raising capital for firms of all sizes, with an emphasis on non-publicly traded firms. Topics include methods of accessing and servicing both debt and equity capital at different stages of the firm from start-up to maturity. Typically Offered: Fall, Spring.

FIN 324 Real Estate (2 credits)

This course examines different aspects of pricing, marketing, and selling/buying residential and commercial real estate. Topics also include real estate brokerage/licensing requirements. The curriculum in this course is intended to provide practical knowledge relating to residential and commercial real estate from both a consumer and realtor standpoint. Typically Offered: Fall, Spring.

FIN 325 Financial Planning Services (1 credit)

This course provides an overview of the financial services industry as it relates to providing financial planning services to clients and customers. These services include helping clients plan for financial security, education, retirement, estate planning, and other life events. The curriculum in this course is intended to provide practical knowledge relating to financial service providers and would be relevant to those pursuing careers in the financial planning industry. Typically Offered: Fall, Spring.

FIN 381 International Finance (3 credits)

Study of financial problems facing business engaged in international activities; foreign exchange risk management, international diversification, multinational capital budgeting, country risk analysis, financing foreign investments, international financial markets.

Prereqs: ECON 201 or ECON 272; and Instructor Permission

FIN 398 (s) Internship (1-3 credits, max 6)**FIN 404 (s) Special Topics (1-16 credits)**

Credit arranged

FIN 407 Financial Institutions (3 credits)

Examines management and regulation of financial institutions, including structure of global financial markets and the measurement and management of risk for these institutions.

Prereqs: FIN 302

FIN 408 Security Analysis (3 credits)

Emphasis on theory and practice of security analysis and other techniques of financial analyses; may involve management of actual portfolios. (Fall only)

Prereqs: FIN 302

FIN 409 Problems in Financial Management (3 credits)

Analysis of selected topics in financial management; asset allocation; capital budgeting and valuation; synthesis of financial management skills through case analysis; written and oral reports and computer simulations. May involve evening exams. (Spring only)

Prereqs: FIN 302 and BUS 354

FIN 460 Advanced Student Investment Fund Management (1 credit, max arranged)

Open only to students participating in the A. D. and J. E. Davis Student Investment Program. "Hands on" experience in investment management; students manage a funded portfolio in terms of establishing objectives, security selection, asset allocation, and portfolio performance. May meet concurrently with FIN 260. Graded P/F. May involve field trips.

Prereqs: Permission

FIN 463 Portfolio Management (3 credits)

Application of security selection, portfolio theory and construction; financial futures; risk and return in investments; may involve management of actual portfolios.

Coreqs: FIN 302 and BUS 354

FIN 464 Derivatives and Risk Management (3 credits)

This course will cover methods used to establish the fair price of derivative securities and the creation of synthetic securities, demonstrate the practical uses of derivatives in speculation, hedging and arbitrage, and examine the process of measurement and management of financial risk. (Spring only)

Prereqs: FIN 302 and BUS 354

FIN 465 Introduction to Market Trading (3 credits)

Provides students practical experiences in the analysis of financial conditions and markets with the objective of developing trading and risk management strategies. Professional trading analysis software is used. The major topics covered include financial instruments, fundamental and technical analysis of markets, inter-market analysis, and risk management. Typically Offered: Varies.

Coreqs: FIN 302 and BUS 354; or Permission

FIN 466 Market Trading Strategies (3 credits)

Provides students practical experiences in the analysis of financial conditions and markets with the objective of developing trading and risk management strategies. Professional trading analysis software is used. Students in this class will develop strategies that can be submitted for funding by the Barker Trading Program. Typically Offered: Varies.

Prereqs: FIN 465 and Permission

FIN 467 Barker Capital Management Group (1 credit, max 6)

Students in this course will function as a member of the Barker Capital Management Group (BCMG) and will work individually and in teams to manage a portion of the Barker Endowment Fund. The class will identify and research investment opportunities for the fund, develop and implement risk management strategies for the portfolio, monitor the results and make adjustments to the portfolio as required. Graded P/F. May involve field trips.

Prereqs: Permission

FIN 468 Market Trading Lab (1 credit, max 6)

This course is a lab to complement FIN 465 Introduction to Market Trading and FIN 466 Market Trading Strategies. Students who take this course will either trade a portfolio funded by the Barker Capital Markets and Trading Program endowment, or be actively working towards qualifying for a funded portfolio. Students will receive mentoring from the instructor and other faculty participating in the Barker Program. The students will also interact with other funded traders and, on occasion, provide mentoring to students in earlier stages of the program. Graded P/F. May involve field trips.

Prereqs: FIN 465, FIN 466, and Permission

FIN 469 Risk and Insurance (3 credits)

Examines risk and insurance, covering risk identification and measurement, risk reduction and hedging, and insurance pricing. (Fall only)

Prereqs: FIN 302 and BUS 354

FIN 471 Applied Risk Management Symposium (1 credit, max 8)

This course presents a series of speakers from industry to discuss topics relevant to financial markets and industry career opportunities. Topics include current market conditions, available market instruments and their use, predictive outlooks, and organizational needs and strategies. The topics are discussed with respect to various time horizons and risk appetites. Direct interaction between the students and speakers is encouraged. Graded Pass/Fail. Graded Pass/Fail. Typically Offered: Fall and Spring.

Prereqs: Sophomore standing or higher

FIN 483 Topics in Financial Analysis (3 credits)

This course examines various topics relevant to the CFA Institute's Common Body of Knowledge. Topics will vary based on current issues in the financial analysis industry.

Prereqs: FIN 302 and BUS 354

FIN 499 (s) Directed Study (1-16 credits)

Credit arranged

Fire Sciences (FIRE)

FIRE 111 Saws and Pumps (1 credit)

Basic operation of chainsaws for use on the fireline and wildland fire pumps. Typically Offered: Spring and Summer.

FIRE 142 Introduction to Wildland Fire Management (2 credits)

Introduction to wildland fire management including fire behavior, fire weather, management practices, and fire ecology. Typically Offered: Spring.

FIRE 144 Wildland Fire Management (3 credits)

Introduction to wildland fire management including fire behavior, fuels, fire prevention and suppression, fire policy and fire ecology. Includes discussion of current fire management issues. Typically Offered: Varies.

FIRE 145 Career in Fire and Fuels (2 credits)

Introduction to the spectrum of career paths related to fire and fuels. Students will meet professionals from a variety of agencies and levels. Students will work through the application process for selected agencies and may be able to secure meaningful summer work. Typically Offered: Fall.

FIRE 202 Leadership and Decision-Making in Fire Management (3 credits)

Survey of contemporary issues related to wildland fire, and the development of skills in conflict resolution, collaborative problem solving, and decision making to help adapt to new situations and incorporating new people and information in the natural resource management process. Typically Offered: Spring.

FIRE 210 Introduction to Fire Effects and Management (2 credits)

Introduction to fire effects on soils, aquatic ecosystems, cultural resources, flora, fauna, plant disease, and invertebrates. Introduction to how adaptive management can be used to manage complex systems. Typically Offered: Fall.

FIRE 213 Vegetation Management (3 credits)

Introduction of the various methods for managing vegetation including prescribed fire, wildfire, thinning, mastication, and herbicide. Use case studies to understand when and how to apply these treatments and how these treatments have influenced fire behavior. Typically Offered: Spring and Summer.

Prereqs: FIRE 210

FIRE 226 Wildland-Urban Interface Assessment and Communication (3 credits)

Introduction to the management challenges and strategies in the wildland-urban interface. Includes communication with the public. Typically Offered: Fall.

FIRE 253 Introduction to Fuels Inventory and Sampling (2 credits)

Sampling design and protocols used to measure and report fuel loading, fire behavior fuel model, fuel moisture, and species diversity. Typically Offered: Fall.

FIRE 254 Fire Environment (3 credits)

Intermediate fire behavior, fire weather, fire management, and ecology including monitoring of the fire environment. Typically Offered: Spring.

Prereqs or Coreqs: FIRE 210

FIRE 256 Science Synthesis in Fire Ecology and Management (1 credit)

Synthesis of the current scientific and professional publications related to fuels and fire management. Typically Offered: Fall.

FIRE 261 Fire Technology (3 credits)

Applied techniques for using technology to map and model fire. Modeling using programs such as BehavePlus, FireFamilyPlus, and IFTDSS.

Mapping using ArcGIS, Avenza, and Lidar with an optional unit on UAS. Typically Offered: Spring.

Prereqs or Coreqs: FIRE 210

FIRE 284 Fire Policy and Administration (3 credits)

Synthesis of historic and current fire policy and how it is implemented across agencies. Typically Offered: Fall.

FIRE 290 Medical Response and Stress Management in Natural Resources (3 credits)

Emergency medical response in remote areas including patient care and extrication. Stress management from traumatic incidents and long-term exposure. Typically Offered: Spring.

FIRE 298 Wildland Fuels and Fire Internship (1 credit, max 2)

Employment in wildland fuels or fire at an approved facility or organization structured to provide varied occupational experiences. Typically Offered: Summer.

FIRE 321 Cultural Use of Fire (3 credits)

Survey of historic and current use of fire as a cultural resource in Native American Tribes of the United States. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

FIRE 323 Communication and Facilitative Instruction in Fire Management (2 credits)

Best practices for communication and instruction inside and outside of agencies. Typically Offered: Fall.

FIRE 326 Fire Ecology (3 credits)

The global study of wildfire as a biophysical and ecological process, including controls of wildfires, ecological effects of wildfires, fire history, and fire in the context of global environmental change. Evolutionary plant adaptations to fire and mechanistic impacts of fire on organisms. Current issues in fire science in the Western US and globally, including readings and discussions of recent scientific literature. Typically Offered: Fall.

Prereqs: FOR 221 or REM 221 or WLF 220

FIRE 407 GIS Application in Fire Ecology and Management (3 credits)

Introduces applications of GIS in fire ecology, research, and management including incident mapping, fire progression mapping, GIS overlay analysis, remote sensing fire severity assessments, fire atlas analysis and the role of GIS in the Fire Regime Condition Class concept and the National Fire Plan. Typically Offered: Spring.

Prereqs: FOR 375 or GEOG 385

FIRE 427 Prescribed Burning Lab (3 credits)

General Education: Senior Experience

Planning, conducting and evaluating prescribed burns designed to accomplish natural resource management objectives. Sampling, models and analysis used in writing required fire use plan. 5 days of field trips; some on Saturdays. (Fall only)

Prereqs: FIRE 144 and Senior standing; and Permission Prereqs or

Coreqs: FIRE 326

FIRE 433 Fire and Fuel Modeling (2 credits)

Learn to operate and evaluate contemporary spatial and non-spatial fire and fuel modeling systems and tools (e. g. , FireFamilyPlus, Fire Behavior Fuel Models, BehavePlus, LANDFIRE, FlamMap, and IFTDSS). Perform a landscape-scale fire and fuels assessment for an area of your choice and evaluate the modeling results for management applications on fuel treatment effectiveness or potential fire behavior impacts. Typically Offered: Varies.

Prereqs: FOR 375, GEOG 385, or Permission

FIRE 435 Remote Sensing of Fire (3 credits)

Joint-listed with FOR 535

The course describes the state of the art algorithms and methods used for mapping and characterizing fire from satellite observations. The course will link the physical aspects of fire on the ground with the quantities that can be observed from remote sensing, and present an overview of the different aspects of environmental fire monitoring. The course will be accompanied by weekly lab sessions focused on the processing of satellite data from sensors used operationally for fire monitoring. This course assumes that you are familiar with the fundamental concepts of mathematics and physics, understand basic remote sensing techniques, and can use maps and GIS data layers. For graduate credit, additional literature review and a class project including evaluation of new, advanced technologies is required. (Spring) Typically Offered: Spring.

Prereqs: FOR 375 or Permission

FIRE 450 Fire Behavior (2 credits)

Understand the physical and chemical processes controlling combustion and fire behavior. Gain in-depth knowledge of commonly-used, point-scale fire behavior models and tools, including key assumptions and limitations. Critically review and discuss scientific literature, current topics, and case studies. Lab sessions include designing and undertaking small-scale fire behavior experiments, developing simple quantitative models, and a field trip. Typically Offered: Varies.

Prereqs: FIRE 326; and PHYS 100/PHYS 100L or PHYS 111/PHYS 111L

FIRE 451 Fuels Inventory and Monitoring (3 credits)

Tools, quantitative analysis, and approaches for inventory and management of fuels for wildland fires over large, diverse areas in forests, woodlands, shrubland, and grasslands. Critically review and synthesize relevant scientific literature. Typically Offered: Spring.

FIRE 454 Air Quality, Pollution, and Smoke (3 credits)

Cross-listed with GEOL 454

Joint-listed with FIRE 554

Provides details of the controls and drivers of emission processes and impacts on air quality from fires, industry, and natural sources. The course provides an overview of relevant policy and health impacts of various air pollutants on humans. It also includes detail on atmospheric chemistry and physics related to natural and anthropogenic emissions and how these impact atmospheric chemistry and climate. Overview of the combustion and emission process, how these emissions impact air quality, and what models exist to monitor these emissions. Other topics to include: guidelines for smoke management planning, attainment issues, atmospheric transport and deposition processes. Additional work required for graduate credit. Typically Offered: Spring and Summer.

FIRE 526 Fire Ecology (3 credits)

Fire-related ecology of plant and animal species in wildlands; effects of fire occurrence and suppression on physical environment, landscapes, and processes in both natural and managed ecosystems. Two days of field trips. (Alt/years)

Prereqs: general ecology course

FIRE 554 Air Quality, Pollution, and Smoke (3 credits)

Joint-listed with FIRE 454, GEOL 454

Provides details of the controls and drivers of emission processes and impacts on air quality from fires, industry, and natural sources. The course provides an overview of relevant policy and health impacts of various air pollutants on humans. It also includes detail on atmospheric chemistry and physics related to natural and anthropogenic emissions and how these impact atmospheric chemistry and climate. Overview of the combustion and emission process, how these emissions impact air quality, and what models exist to monitor these emissions. Other topics to include: guidelines for smoke management planning, attainment issues, atmospheric transport and deposition processes. Additional work required for graduate credit. Typically Offered: Spring and Summer.

FIRE 557 Advanced Fire Behavior (3 credits)

Credit may be earned in only one of the following: FIRE 450 or FIRE 557.

This course is an online course only. Understand the processes that control fire behavior in forest and rangelands, including combustion, emissions and heat release, and related fire effects. Use theory and advanced knowledge with scientific literature and case studies to critically assess the assumptions and limitations of limitations of surface and crown fire models, including the varying influences of fuels, terrain, and environmental conditions.

FIRE 587 Wildland Fire Policy (2 credits)

This course is an online course only. Relationships between fire science and management and the federal laws and regulations that affect fire management in wildland ecosystems; the politics of wildland fire; and the effects of wildland fire on wildland-urban interface (WUI) communities. Recommended preparation is an upper division course in natural resource, environmental policy, or FOR 584. (Fall only)

Fishery Resources (FISH)

FISH 102 The Fish and Wildlife Professions (1 credit)

Cross-listed with WLF 102

Orientation of students to the profession of fishery resources and wildlife resources: introduction to fish and wildlife faculty, review of fish and wildlife curriculum, awareness of career opportunities, employment procedures, associated job duties/responsibilities, job preparation, educational preparation, and management challenges in the Pacific Northwest. (Fall only)

FISH 200 (s) Seminar (1-16 credits)

Credit arranged

FISH 203 (s) Workshop (1-16 credits)

Credit arranged

FISH 204 (s) Special Topics (1-16 credits)

Credit arranged

FISH 299 (s) Directed Study (1-16 credits)

Credit arranged

FISH 314 Fish Ecology (3 credits)

Examination of physical, chemical, and biological factors that affect fish populations and communities, with emphasis on environmental stressors. Typically Offered: Fall.

Prereqs: FOR 221, REM 221, WLF 220, or BIOL 314. Cooperative: open to WSU degree-seeking students.

FISH 315 Fish Ecology Field Techniques and Methods (2 credits)

Laboratory and field experience in fish ecology with emphasis on field techniques, laboratory experimentation, and habitat assessment. One weekend field trip and several day trips required. (Fall only)

Prereqs: FOR 221, NR 321, or BIOL 314

FISH 398 (s) Renewable Natural Resources Internship (1-16 credits)

Credit arranged. Supervised field experience with an appropriate public or private agency. Required for cooperative education students. Graded P/F.

Prereqs: Permission of department

FISH 400 (s) Seminar (1-16 credits)

Credit arranged

FISH 403 (s) Workshop (1-16 credits)

Credit arranged

FISH 404 (s) Special Topics (1-16 credits)

Credit arranged

FISH 411 Fish Physiology (2 credits)

Joint-listed with FISH 511

Physiology of fishes, their implications, and applications. Principles and methods used to study organ systems and physiological mechanisms of homeostatic regulation in fishes.

Prereqs: FISH 481

FISH 415 Limnology (4 credits)

Joint-listed with FISH 535

Examination of physical, chemical, and biological characteristics of inland waters. Laboratory focus will be on sampling waterbodies in Idaho, equipment use, and analysis of samples. Part of the course is dedicated to a service-learning project to tackle a real-world problem in limnology.

Two lectures and one 4-hour laboratory per week. Depending on the service-learning project, one 1-day weekend field trip may be required.

Additional reading, and/or collation of service-learning reports, and/or written reports of assigned literature required for graduate credit. Typically Offered: Fall.

Prereqs: STAT 251 and FOR 221, REM 221, WLF 220 or BIOL 314.

Cooperative: open to WSU degree-seeking students.

FISH 418 Fisheries Management (4 credits)

General Education: Senior Experience

Techniques employed in sampling and application of principles toward managing recreational and commercial aquatic resources. Three lectures and one 3-hour lab per week; two weekend field trips. (Fall only)

Prereqs: FISH 314 and FISH 481 and STAT 251 Cooperative: open to WSU degree-seeking students.

FISH 422 Concepts in Aquaculture (4 credits)

Concepts and methods of extensive and intensive aquaculture in warm water and cold water systems. Two field trips required (a 1-day and a 3-day field trip). Cooperative: open to WSU degree-seeking students. (Spring only)

Prereqs or Coreqs: FISH 481

FISH 424 Fish Health Management (4 credits)

Epidemiology, prevention, diagnostics, and treatment of infections and non-infectious diseases of free-living and confined finfish and shellfish. Two field trips required (a 1-day and a 3-day field trip). Recommended Preparation: FISH 422. Cooperative: open to WSU degree-seeking students. (Spring only)

Prereqs: BIOL 250

FISH 430 Riparian and River Ecology (3 credits)

Course focuses on the ecology of riverscapes; the structure, function and management of fluvial ecosystems; and the interrelationships between rivers and their riparian ecosystems. Course seeks to integrate aspects of hydrology, fluvial geomorphology, aquatic entomology, riparian habitat, fish communities and human impacts to provide a multidisciplinary understanding of riverscapes. At least 2 half day field trips will be required. Special fee required. Typically Offered: Spring.

Prereqs: FOR 221, REM 221, WLF 220, or BIOL 314

FISH 450 Ecology & Conservation of Freshwater Invertebrates (2 credits)

Joint-listed with FISH 550

The course will survey the evolutionary origins and identification of major groups of invertebrates occurring in freshwaters, examine the key behavioral, morphological, and physiological traits possessed by freshwater invertebrates, identify the key ecological roles and influence of invertebrates in freshwater ecosystems and ecosystem services, and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosystem condition. Cooperative: open to WSU degree-seeking students. (Spring, alt/years)

Prereqs: BIOL 114 or ENT 322 or Permission.

FISH 451 Freshwater Invertebrate Field Methods (2 credits)

Joint-listed with FISH 551

The course will survey the systematics and identification of freshwater invertebrates and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosystem condition. Students will collect and identify freshwater invertebrates from habitats surrounding Moscow, Idaho during an intensive field course. The course will occur on one weekend in February and five days of Spring Break. The course has two required field trips. Cooperative: open to WSU degree-seeking students. (Spring, alt/years)

Prereqs: BIOL 114 or ENT 322 or Permission

Coreqs: FISH 450

FISH 473 ECB Senior Presentation (1 credit)

General Education: Senior Experience

Cross-listed with FOR 473, FSP 473

, NRS 473, REM 473, WLF 473. Reporting and presenting the senior project (thesis or internship); taken after or concurrently with REM 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).

Prereqs: Instructor Permission

FISH 481 Ichthyology (4 credits)

Anatomy, systematics, physiology, behavior, genetics and zoogeography of fishes. Three lectures and one 3-hour lab per week. Course has two required field trips. (Spring only).

Prereqs: BIOL 114 and BIOL 115, and BIOL 213 or instructor permission

FISH 483 Senior Project Presentation (1 credit)

Cross-listed with WLF 483

Reporting and presenting the senior project (thesis or internship); taken after or concurrently with FISH 497.

FISH 495 (s) Fisheries Seminar (1 credit)

General Education: Senior Experience

Discuss integrating biological, social, political, economic, and philosophic aspects of problems in managing fishery resources. (Spring only)

Prereqs: Senior standing

FISH 497 Senior Thesis (1-3 credits, max 6)

Preparation of thesis, exhibition, video, computer program, multimedia program, or other creative presentation based on research conducted under the guidance of a faculty mentor.

Prereqs: Cumulative GPA of at least 3. 2 in all college courses, completion of at least 90 credits, and permission of a faculty mentor.

FISH 498 (s) Internship (1-16 credits)

Credit arranged. The internship serves to provide hands-on experience for students interested in fisheries and aquaculture.

Prereqs: Instructor permission

FISH 499 (s) Directed Study (1-16 credits)

Credit arranged. For the individual student; conferences, library, field, or lab work.

Prereqs: Senior standing, GPA 2. 5, and Permission

FISH 500 Master's Research and Thesis (1-16 credits)

Credit arranged

FISH 501 (s) Seminar (1-16 credits)

Credit arranged. Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.

FISH 502 (s) Directed Study (1-16 credits)

Credit arranged

FISH 503 (s) Workshop (1-16 credits)

Credit arranged. Selected topics in the conservation and management of fish and aquatic systems. Cooperative: open to WSU degree-seeking students.

Prereqs: Permission

FISH 504 (s) Special Topics (1-16 credits)

Credit arranged New selected topics in the conservation and management of fish and aquatic systems. Cooperative: open to WSU degree-seeking students.

FISH 511 Fish Physiology (2 credits)

Joint-listed with FISH 411

Physiology of fishes, their implications, and applications. Principles and methods used to study organ systems and physiological mechanisms of homeostatic regulation in fishes. Cooperative: Open to WSU degree-seeking students. (Spring, alt/years)

Prereqs: Permission

FISH 515 Large River Fisheries (2 credits)

Management issues and problems in large river fisheries in North America and globally; importance of flood plains; ecological bases for management actions in large rivers; river fisheries in the context of multiple use of large rivers. Cooperative: open to WSU degree-seeking students. (Fall, alt/years)

FISH 525 Aquaculture in Relation to Wild Fish Populations (2 credits)

Historical and current relationships between wildness and domestication as it relates to fisheries management and aquaculture in mitigation and industry. Interactions between wild and hatchery-reared fishes, including salmon. Cooperative: open to WSU degree-seeking students. (Fall, alt/years)

FISH 526 Climate Effects & Cons Manage (2 credits)

Climate change and the conservation and management of populations and ecosystems. This graduate seminar will examine the current understanding of climate controls on ecosystems, likely scenarios for climate change in coming years, effects on fish and wildlife communities and populations and policy discussions as they relate to conservation and management using analysis of primary literature, and oral and written assignments. Cooperative: open to WSU degree-seeking students. (Fall, alt/years)

Prereqs: Previous coursework in ecology or Permission.

FISH 535 Limnology (4 credits)

Joint-listed with FISH 415

Examination of physical, chemical, and biological characteristics of inland waters. Laboratory focus will be on sampling waterbodies in Idaho, equipment use, and analysis of samples. Part of the course is dedicated to a service-learning project to tackle a real-world problem in limnology. Two lectures and one 4-hour laboratory per week. Depending on the service-learning project, one 1-day weekend field trip may be required. Additional reading, and/or collation of service-learning reports, and/or written reports of assigned literature required for graduate credit. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

FISH 540 Wetland Restoration (3 credits)

This web-based course contains modules covering wetland science, restoration ecology, freshwater restoration, coastal restoration, and monitoring/maintenance. The emphasis is on the science of wetland ecosystems and the applied ecology/practice of restoration, with additional consideration of cultural and socio-political contexts. Extensive readings, an assignment, and a study guide are required for each module. Students apply their learning in and contribute relevant professional experience to weekly online discussions. Students are also responsible for obtaining documentation of at least one wetland restoration site in their region and conducting a site visit in order to evaluate the success of the restoration project. A final exam (re-design of a failed restoration project) is administered online, with partial credit earned through discussion with an interdisciplinary team of classmates and the remaining credit earned through individual analysis and synthesis. (Fall only)

Prereqs: BIOL 114 and BIOL 115; and FOR 221 or BIOL 314 or Permission

FISH 550 Ecology & Conservation of Freshwater Invertebrates (2 credits)

Joint-listed with FISH 450

The course will survey the evolutionary origins and identification of major groups of invertebrates occurring in freshwater, examine the key behavioral, morphological, and physiological traits possessed by freshwater invertebrates, identify the key ecological roles and influence of invertebrates in freshwater ecosystems and ecosystem services, and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosystem condition. Cooperative: open to WSU degree-seeking students. (Spring, alt/years)

FISH 551 Freshwater Invertebrate Field Methods (2 credits)

Joint-listed with FISH 451

The course will survey the systematics and identification of freshwater invertebrates and demonstrate how freshwater invertebrates can be used to monitor water quality and ecosystem condition. Students will collect and identify freshwater invertebrates from habitats surrounding Moscow, Idaho during an intensive field course. The course will occur on one weekend in February and five days of Spring Break. The course has two required field trips. Cooperative: open to WSU degree-seeking students. (Spring, alt/years)

Prereqs: BIOL 114 or ENT 322 or Permission

Coreqs: FISH 450

FISH 560 Advanced Fisheries Techniques (3 credits)

This course focuses on sampling techniques and designs, length structure and body condition indices, age and growth of fishes, mortality estimation, and age-structured population models used in the management of exploited fish populations. Typically Offered: Spring (Odd Years).

Prereqs: STAT 431; instructor permission required Cooperative: open to WSU degree-seeking students.

FISH 598 (s) Internship (1-16 credits)

Credit arranged

FISH 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

FISH 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Food and Nutrition (FN)

FN 205 Concepts in Human Nutrition (3 credits)

Nutrition principles with their application to nutrition in life cycle; nutrition problems and controversies such as weight control and nutrition for athletes; individual computerized study of student's dietary intake. Typically Offered: Fall.

FN 270 Scientific Principles of Food Preparation (3 credits)

Exploration of the scientific principles, basic concepts, and techniques of food preparation; food safety principles; sensory evaluation of food. Typically Offered: Spring.

FN 271 Scientific Principles of Food Preparation Lab (2 credits)

Exploration of food preparation and application of underlying scientific principles through laboratory experiments. Applied sensory evaluation of food products; recipe modification and testing for special dietary considerations. Typically Offered: Spring.

Prereqs or Coreqs: FN 270

FN 305 Nutrition in the Life Cycle (3 credits)

Maternal nutrition and fetal development; lactation; nutritional needs and dietary patterns from conception to end of life. Recommended preparation: high school biology and chemistry. Typically Offered: Fall.

Prereqs: FN 205

FN 370 Meal Management (3 credits)

Principles of meal management for individual and family meals including menu planning, purchasing, preparation, and service. Includes cultural, social, economic, and environmental aspects of food selection and menu planning and the role of food in promotion of a healthy lifestyle. Typically Offered: Fall.

FN 376 Food Preservation (1 credit)

Online course explores foodborne illness, food safety and food science behind high quality, shelf-stable home preserved foods; topics include water bath canning, pressure canning, pickling, freezing, and drying. Typically Offered: Summer.

FN 404 (s) Special Topics (1-16 credits, max arranged)**FN 415 Advanced Nutrition (3 credits)**

Joint-listed with FN 515

Principles of nutrition; physiology of digestion, absorption and metabolism of nutrients. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

Prereqs: FN 205, BIOL 300, BIOL 227 and BIOL 228

FN 450 Global Nutrition (3 credits)

General Education: International

Joint-listed with FN 550

The history of food, hunger, and the global nature of food systems. Food & culture, environmental impact of food decisions, agricultural production, world populations relative to food supply, hunger, biotechnology, safety of our food supply, sustainability, effects of urbanization, and problems of under- and over-nutrition will be examined. Additional work required for graduate credit. Typically Offered: Spring.

FN 451 Eating Disorders (2 credits)

Joint-listed with FN 551

Examination of anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; discussion of cultural and nutritional factors, family issues, and psychological consequences, as well as preventative and therapeutic interventions. Additional projects/ assignments required for graduate credit. Family and Consumer Sciences major or Permission. Typically Offered: Spring.

FN 453 Research Methods in Food Nutrition (3 credits)

Research methodology currently used in food and nutrition; critical review of the literature; use of electronic surveys; research proposal and presentations. Typically Offered: Spring.

Prereqs: FN 205 and STAT 251

FN 459 Sport Nutrition (3 credits)

Cross-listed with PEP 459

Joint-listed with PEP 559

This course will explore the fundamentals of nutrition and how nutrition plays a role in sports performance. This course will also cover the macronutrient requirements for sport and the role carbohydrates, fats and proteins play in fueling the body at rest and during exercise. Additionally, special topics about vitamins, minerals, and dietary supplements as well as certain nutritional concerns of various types of athletes will be discussed. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

Prereqs: Permission

FN 464 Nutrition Counseling (3 credits)

Application and integration of behavior change theoretical approaches and strategies in nutrition and dietetics. Development of communication skills. This course requires role-playing and real-playing. Students are assessed on the knowledge and skills they have acquired. Typically Offered: Fall.

Prereqs: FN 205

FN 465 Clinical Dietetics (3 credits)

Review and application of the Nutrition Care Process; introduction of nutrition therapies for disease. Typically Offered: Spring.

Prereqs: FN 415

FN 466 Nutrition Assessment Laboratory (1 credit)

Application of nutrition assessment. Three hours of lab per week. Typically Offered: Spring.

Prereqs: FN 415

FN 470 Quantity Food Production and Equipment (3 credits)

Principles and practices of food production in large volume; foodservice systems and management; use and selection of institutional foodservice equipment. Three hours of lecture per week. Typically Offered: Fall.

Prereqs: FN 271 and FN 370

FN 471 Quantity Food Production and Equipment Lab (2 credits)

Quantity food production lab and supervised practice experience including equipment training, recipe development and testing, theme meal production, and foodservice facility rotations. Typically Offered: Fall.

Prereqs: FN 271 and FN 370

Coreqs: FN 470

FN 484 Vegetarian Food and Nutrition (3 credits)

Vegetarian food and nutrition principles with their application to health benefits and life cycles stages. Typically Offered: Varies.

Prereqs: FN 205

FN 491 Community Nutrition (3 credits)

Identification of current public health nutrition problems; influence of socioeconomic, cultural and psychological factors on food and nutrition behavior; available community programs; program development and marketing; and the implications of public policy legislation; teaching/ counseling methods for the nutrition education of small groups and individual clients/patients. Typically Offered: Fall.

Prereqs: FN 205

FN 492 Nutrition Education (3 credits)

General Education: Senior Experience

General Education: Senior Experience. Principles and theories of learning, curriculum development, evaluation methods, and applied food and nutrition education. Typically Offered: Spring.

Prereqs: FN 205 and Food and Nutrition major; or Permission

FN 498 (s) Internship (1-16 credits)**FN 499 (s) Directed Study (1-16 credits, max arranged)****FN 500 Master's Research and Thesis (1-16 credits)**

Credit arranged

FN 502 (s) Directed Study (1-16 credits)

Credit arranged

FN 504 (s) Special Topics (1-16 credits)

Credit arranged

FN 509 Nutrition and Dietetics Professional Skills (1 credit)

1 credit. Prepares dietetic students to assume professional responsibilities to provide safe, ethical, and effective nutrition services and to use effective communication, collaboration, and advocacy skills. Typically Offered: Fall.

Prereqs: Enrollment in M. S Dietetics Program

FN 510 Gastrointestinal Physiology and Immunology (3 credits)

This course starts with review of basic anatomy and physiology of the gastrointestinal (GI) tract. The course then takes a deeper dive into cellular components, perfusion, enteric nervous system, and the resident immune system within the GI tract in relation to nutrient digestion and absorption in health and disease. Current supplementary research articles will be evaluated to encourage students to think critically about the application of these concepts in research and practice. Recommended preparation: A human anatomy and physiology course and/or a concepts in human nutrition course. Typically Offered: Fall.

FN 515 Advanced Nutrition (3 credits)

Joint-listed with FN 415

Principles of nutrition; physiology of digestion, absorption and metabolism of nutrients. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

FN 550 Global Nutrition (3 credits)

General Education: International

Joint-listed with FN 450

The history of food, hunger, and the global nature of food systems. Food & culture, environmental impact of food decisions, agricultural production, world populations relative to food supply, hunger, biotechnology, safety of our food supply, sustainability, effects of urbanization, and problems of under- and over-nutrition will be examined. Additional work required for graduate credit. Typically Offered: Spring.

FN 551 Eating Disorders (2 credits)

Joint-listed with FN 451

Examination of anorexia nervosa, bulimia nervosa, compulsive eating, obesity, and weight preoccupation; discussion of cultural and nutritional factors, family issues, and psychological consequences, as well as preventative and therapeutic interventions. Additional projects/assignments required for graduate credit. Family and Consumer Sciences major or Permission. Typically Offered: Spring.

FN 559 Sport Nutrition (3 credits)

Joint-listed with FN 459, PEP 459

This course will explore the fundamentals of nutrition and how nutrition plays a role in sports performance. This course will also cover the macronutrient requirements for sport and the role carbohydrates, fats and proteins play in fueling the body at rest and during exercise. Additionally, special topics about vitamins, minerals, and dietary supplements as well as certain nutritional concerns of various types of athletes will be discussed. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

FN 565 Nutrition Therapy and Disease (3 credits)

Course content includes evidence-based practice in nutritional management of diseases. Elements of pathology and biochemistry of the nutrition related problems are integrated into course topics. Students will apply the entire nutrition care process through a variety of clinical cases and simulations. Typically Offered: Fall.

Prereqs: FN 465

FN 566 Applied Clinical Dietetics (7 credits)

Applied Clinical Dietetics takes place in hospitals in Idaho or Washington. Students spend 320 hours of supervised experiential learning implementing the nutrition care process with a diverse patient population. Typically Offered: Spring.

Prereqs: FN 565 and Enrollment in the M. S. Dietetics program.

FN 570 Management and Leadership in Dietetics (3 credits)

Institutional organization, management, and leadership concepts for dietetics practice. Course includes applied management experiences in foodservice facilities and dietetics leadership projects. Typically Offered: Fall.

FN 571 Applied Food and Nutrition Management (7 credits)

Applied food and nutrition management takes place in hospital foodservice facilities and child nutrition program settings in Idaho, Washington, and Oregon. Students spend 320 hours in organizational settings where they apply skills and meet competencies in food service management and leadership. Typically Offered: Spring.

Prereqs: FN 570 and Enrollment in the MS Dietetics Program

FN 591 Applied Community Nutrition (5 credits)

Applied community nutrition takes place in a facility in Idaho or Washington. Students will be assigned to a facility that they will report to two days per week throughout a 16-week semester or every day during a 6-week summer session. Students will spend 240 hours of supervised experiential learning and educating the community on topics related to health. Recommended preparation: FN 491. Typically Offered: Fall.

Prereqs: Enrolled in the M. S. Dietetics program

FN 599 Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

FN 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Food Science (FS)

FS 110 Introduction to Food Science (3 credits)

Chemistry, microbiology, and processing of food and food products; concepts of food preservation, packaging and marketing of foods; food additives and regulations; world food problems. Field trip may be required. Cooperative: open to WSU degree-seeking students.

FS 113 Introduction to Vines and Wines (3 credits)

The importance of viticulture (grape growing) and enology (winemaking); wine quality. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

FS 201 (s) Science on Your Plate: Food Safety, Risks and Technology (3 credits)

General Education: American Diversity, Natural/Integrated Science
Cross-listed with CORS 232

An interdisciplinary, thematically based course intended to provide the student with the skills to analyze and evaluate scientific claims and to make intelligent scientific and social decisions; among the topics addressed are the impact of science on society and the ethical dilemmas and moral consequences of scientific research; all themes/sections emphasize discussion, collaborative work, and the conduct of science, though not necessarily in a formal lab setting. See www.uidaho.edu/class/general-education for specific course titles and descriptions.

FS 204 (s) Special Topics (1-16 credits)

Credit arranged.

FS 220 Food Safety and Quality (3 credits)

Regulation, safety, and wholesomeness of food products; microbiological, chemical, and physical risks associated with food; hazard analysis as related to food safety, processing and quality; sanitation and pest management principles; methods for analyzing the sensory qualities of food products; problem management associated with food quality assurance. Cooperative: open to WSU degree-seeking students.

FS 299 (s) Directed Study (1-16 credits)

Credit arranged

FS 301 Food Mycology (3 credits)

Survey of the fungi important in food production, storage, and spoilage. Includes two hours of lecture and three hours of lab per week.

Cooperative: open to WSU degree-seeking students. Coreq or

Prereqs: BIOL 250 or BIOL 255

FS 302 Food Processing Lab (1 credit)

Application of specialized techniques, concepts and practices of food processing. Field trip required. Typically Offered: Fall.

Coreqs: FS 303 Cooperative: open to WSU degree-seeking students

FS 303 Food Processing (3 credits)

Specialized techniques, concepts and practices of food processing. Cooperative: open to WSU degree-seeking students.

Prereqs: AVS 172 or FS 110; and FS 220; and MATH 160 or MATH 170; and STAT 251

Coreqs: FS 302

FS 304 Cereal Chemistry and Processing (3 credits)

This course has been designed to provide students with a breadth of knowledge in the field of cereal grain science. This course will cover cereal and legume structure, chemistry, and function as it relates to processing and utilization. Cooperative: open to WSU degree-seeking students.

Prereqs: CHEM 275 or CHEM 277.

FS 350 Instrumental and Sensory Analysis of Food (5 credits)

Introduction to the theory, principles, and applications of sensory evaluation techniques and instrumental techniques for the evaluation of the chemical and physical properties of foods. Students will learn basic psychological and physiological processes underlying sensory analysis, sensory testing methodologies, and the perception of appearance, aroma, taste, and texture of foods, basic food analysis methods and the relationship between instrumental and sensory methods of analysis. 3 credit lecture, 2 credit laboratory Cooperative: open to WSU degree-seeking students.

Prereqs: FS 110 or FS 201, FS 302 & FS 303, CHEM 277 and CHEM 278, STAT 251

FS 363 Animal Products for Human Consumption (4 credits)

Cross-listed with AVS 363

The meat, dairy, and egg industries, including product produced, processed, safety (HACCP), nutrition, distribution, quality, quantity, palatability, health, cooking, home storage, and consumer concerns. Special clothing and equipment required. Three lecture credits and one 3-hour lab per week. Recommended Preparation: BIOL 115. Cooperative: open to WSU degree-seeking students.

FS 398 (s) Internship (1-16 credits)

Credit arranged. Supervised professional internship in the food industry; requires formal written plan of activities approved by academic advisor and department head. Final written report and presentation required.

FS 400 (s) Seminar (1-16 credits)

Credit arranged

FS 401 Industrial Fermentations (3 credits)

Science and technology associated with industrial-scale food fermentations. Cooperative: open to WSU degree-seeking students.

Prereqs: BIOL 250 and BIOL 300

FS 402 Ciders and Other Fermented Foods (3 credits)

Chemistry, microbiology, and technology associated with the production of cider, beer, and other food fermentations. Two half-day field trips required. Typically Offered: Spring.

Prereqs: FS 304; FS 465 Cooperative: open to WSU degree-seeking students.

FS 403 (s) Workshop (1-16 credits)

Credit arranged. Workshops focusing on Food Science.

FS 404 (s) Special Topics (1-16 credits)

Credit arranged. Special topics related to Food Science.

FS 405 (s) Professional Development (1-16 credits)

Credit arranged

FS 406 Evaluation of Dairy Products (2 credits)

Identifying attributes of different dairy products caused by production, processing, and storage issues; determining probable cause of those attributes and how to reduce their occurrence. Recommended Preparation: FS 329, FS 429, and FS 430. Cooperative: open to WSU degree-seeking students.

FS 407 Evaluation of Dairy Products Lab (1 credit)

Identifying defects in dairy products and intense training for Collegiate Dairy Products Evaluation Competition. One 3-hour lab per week. Cooperative course available to WSU degree-seeking students. Graded Pass/Fail.

Coreqs: FS 406

FS 416 Food Microbiology (3 credits)

Purpose for enumeration, detection, and identification of microorganisms in food products; physical, chemical, and environmental factors influencing growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms in food and their control. Cooperative: open to WSU degree-seeking students.

Prereqs: BIOL 250 and BIOL 255

FS 417 Food Microbiology Laboratory (2 credits)

Methods for enumeration, detection, and identification of spoilage and pathogenic microorganisms in foods. Two 3-hour labs per week. Cooperative: open to WSU degree-seeking students.

Prereqs or Coreqs: FS 416

FS 418 Oral Seminar in Food Science (1 credit)

Development of skills and communication tools and techniques for oral presentations of current food science research. Typically Offered: Fall.

Prereqs: FS 110 or FS 220; and junior standing; and major in Food Science. Cooperative: open to WSU degree-seeking students.

FS 429 Dairy Processing (3 credits)

Joint-listed with FS 529

Basic dairy chemistry, microbiology, and processing from cow to consumer; dairy quality, safety, and sanitation; milk components, fluid milk, concentrated milk, cream, butter, ice cream, fermented milk, cheese, and dairy powders. Additional projects/assignments required for graduate credit. Recommended Preparation: FS 110, FS 113. Typically Offered: Fall.

Prereqs: BIOL 300 or BIOL 380, PHYS 111

Coreqs: FS 430 Cooperative: open to WSU degree-seeking students

FS 430 Dairy Processing Lab (1 credit)

Joint-listed with FS 530

Hands-on training in processing of various dairy products (e. g. , fluid milk, butter, ice cream, cheese, and yogurt); milk pick-up and raw milk quality; cleaning and sanitation of dairy plants. Additional projects/ assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs or Coreqs: FS 429 or FS 529

FS 432 Food Engineering (3 credits)

Fundamentals of food engineering for improving the efficiency of food processing operations and the quality of processed food. Principles of heat transfer, steam, air-vapor mixtures, refrigeration and fluid flow as applied to food processing and storage. Recommended preparation: PHYS 111. Cooperative: open to WSU degree-seeking students.

Prereqs: FS 302 and FS 303

Coreqs: FS 433

FS 433 Food Engineering Lab (1 credit)

Enhances the learning experience of the students taking FS 432 through laboratories, problem sessions and group discussions. Cooperative: open to WSU degree-seeking students.

Prereqs or Coreqs: FS 432

FS 436 Principles of Sustainability (3 credits)

Cross-listed with SOIL 436

Joint-listed with FS 536, SOIL 536

Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Typically Offered: Fall and Spring.

Prereqs: Junior standing or higher Cooperative: open to WSU degree-seeking students.

FS 464 Food Toxicology (3 credits)

Cross-listed with SOIL 464

Joint-listed with FS 564 and SOIL 564

General principles of toxicologic evaluation of chemicals, which intentionally or unintentionally enter the food chain. Toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: BIOL 300 or BIOL 380

FS 465 Wine Microbiology and Processing (3 credits)

Joint-listed with FS 565

Technical principles related to the processing and fermentation of wines with an emphasis on microbiology. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: BIOL 250 and BIOL 300

FS 466 Wine Microbiology and Processing Lab (1 credit)

Hands-on winemaking; application of chemical microbiological methods for wine analysis. Field trip required. Typically Offered: Fall.

Prereqs or Coreqs: FS 465 Cooperative: open to WSU degree-seeking students

FS 475 Quality Management Tools for Food Products (3 credits)

Describe fundamental concepts for quality management and improvement of biomanufactured goods. Apply principles of statistical process control in a variety of situations and systems. Cooperative: open to WSU degree-seeking students.

Coreqs: FS 302 and FS 303; STAT 251 or permission from instructor

FS 489 Food Product Development (3 credits)

General Education: Senior Experience

Gen Ed: Senior Experience. Course serves as a capstone experience for food science seniors, and will require the application of food chemistry, food processing/engineering, and microbiology course knowledge in formulating a new food product. Cooperative: open to WSU degree-seeking students.

Prereqs: FS 302, FS 303, FS 416, and FS 460; and Senior standing

FS 498 (s) Internship (1-16 credits)

Credit arranged. Supervised professional internship in the food industry; requires formal written plan of activities approved by academic advisor and department head. Final written report and presentation required. Cooperative: open to WSU degree-seeking students.

Prereqs: Department Permission

FS 499 (s) Directed Study (1-16 credits)

Credit arranged. Cooperative: open to WSU degree-seeking students.

FS 500 Master's Research & Thesis (1-16 credits)

Credit arranged

FS 501 (s) Seminar (1-16 credits)

Credit arranged

FS 502 (s) Directed Study (1-16 credits)

Credit arranged

FS 503 (s) Workshop (1-16 credits)

Credit arranged. Workshops focusing on Food Science.

FS 504 (s) Special Topics (1-16 credits)

Credit arranged. Topics in Food Science.

FS 509 Principles of Environmental Toxicology (3 credits)

Cross-listed with ENVS 509, SOIL 509

Joint-listed with SOIL 409

Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Graduate students are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

FS 517 Scientific Writing (2 credits, max 4)

Planning, writing, reporting, reviewing and evaluating current food-related research. Cooperative: open to WSU degree-seeking students. Preference will be given to graduate students in their second year or higher of study.

FS 518 Oral Seminar (1 credit)

Development of skills and communication tools and techniques for oral presentations of current food science research. Additional projects/ assignments required for graduate credit. Cooperative: open to WSU degree-seeking students. Preference will be given to graduate students in their second year or higher of study.

FS 521 Food Rheology (3 credits)

Rheology is the study of flow, deformation and friction. This course will cover the fundamentals of rheology, including stress, strain, flow behaviors, pipe flow, viscoelasticity, and tribology. In the lab component, we will learn how to correctly set up and run tests. Both the lecture and the lab will focus on sound application of rheological principles for interpretation of rheological data. Cooperative: open to WSU degree-seeking students.

FS 525 Engineering Principles for Foods (3 credits)

Engineering principles of mass and energy balances, fluid flow, heat transfer, mass transfer, psychrometrics, refrigeration, and drying are applied to processing of food products. The engineering problem-solving method is emphasized in determining solutions to application problems. Cooperative: open to WSU degree-seeking students.

Prereqs: FS 303, PHYS 111, and MATH 160 or MATH 170

FS 529 Dairy Processing (3 credits)

Joint-listed with FS 429

Basic dairy chemistry, microbiology, and processing from cow to consumer; dairy quality, safety, and sanitation; milk components, fluid milk, concentrated milk, cream, butter, ice cream, fermented milk, cheese, and dairy powders. Additional projects/assignments required for graduate credit. Recommended Preparation: FS 110, FS 113. Typically Offered: Fall.

Coreqs: FS 430 Cooperative: open to WSU degree-seeking students

FS 536 Principles of Sustainability (3 credits)

Cross-listed with SOIL 536

Joint-listed with FS 436, SOIL 436

Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Typically Offered: Fall and Spring. Cooperative: open to WSU degree-seeking students.

FS 564 Food Toxicology (3 credits)

Cross-listed with SOIL 564

Joint-listed with FS 464, SOIL 464

General principles of toxicologic evaluation of chemicals, which intentionally or unintentionally enter the food chain. Toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Additional projects/assignments required for graduate credit. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

FS 575 Food Quality Management (3 credits)

Discuss the principles and practices of commonly used quality management systems used to maintain and improve the quality of their products and services. Use statistical tools to monitor and assess quality. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 251, FS 302 and FS 303

FS 583 Advances in Cereal Chemistry and Technology (3 credits)

This course provides in-depth information on wheat chemistry and technology as well as chemistry and uses of other cereal grains and legumes. Emphasis will be given to composition and functionality of wheat as related to processing and product quality, along with reviews of recent advances in cereal chemistry and technology. Cooperative: open to WSU degree-seeking students.

FS 588 Food Science Teaching Practicum (1-3 credits)

Supervised teaching in a university setting. Cooperative: open to WSU degree seeking students.

Prereqs: Admission to graduate program and Permission

FS 598 (s) Internship (1-16 credits)

Credit arranged

FS 599 Non-thesis Master's Research (1-16 credits)

Credit arranged

FS 600 Doctoral Research & Thesis (1-45 credits)

Credit arranged

Foreign Language (FL)

FL 200 (s) Seminar (1-16 credits)

Credit arranged

FL 201 Exploration of Language Acquisition and Intercultural Communication (1 credit)

Students will examine the fundamentals of second-language acquisition and intercultural communication and reflect on what role they play in their own language study. The resulting elevated awareness and understanding of language study will prepare students to enter the diverse workforce in the global economy where effective communication and collaboration with diverse colleagues and clients from a range of cultural, ethnic, and linguistic backgrounds is essential. Graded Pass/Fail. Typically Offered: Fall and Spring.

Prereqs: CHIN 101, FREN 101, GERM 101, JAPN 101, or SPAN 101

FL 204 (s) Special Topics (1-16 credits)

Credit arranged

FL 299 (s) Directed Study (1-16 credits)

Credit arranged

FL 400 (s) Special Topics (1-16 credits)

Credit arranged

FL 401 SGS Capstone Experience (1 credit)

General Education: Senior Experience

This course is designed to align with the international understanding and global awareness that are integral to all course work required for the French, Spanish, and Modern Language Business majors within the School of Global Studies. Each student will complete a final project that will showcase their cultural awareness in an international context through analytical and critical processes. In addition, every student participating in this course will be required to take the STAMP (STAndards-based Measurement of Proficiency) exam to evaluate communicative proficiency. Typically Offered: Fall and Spring.

FL 404 (s) Special Topics (1-16 credits)

Credit arranged

FL 498 (s) Internship (1-16 credits)

Credit arranged

FL 499 (s) Directed Study (1-16 credits)

Credit arranged

FL 505 (s) Professional Development (1-16 credits)

Credit arranged

Foreign Language--English (FLEN)

FLEN 200 (s) Seminar (1-16 credits)

Credit arranged

FLEN 204 (s) Special Topics (1-16 credits)

Credit arranged

FLEN 205 Uncommon Traveler (1 credit)

This seminar is a meditation on the art of travel. It will examine questions such as, "How do we experience travel and get the most out of a journey?" and use a variety of materials to explore how travel becomes a meaningful experience.

FLEN 210 Introduction to Classic Mythology (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

Introduction to classical myths and legends, focusing on the classical stories of creation, gods, and heroes.

FLEN 243 English Word Origins (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Fundamental Latin and Greek roots of words used in the humanities, social and natural science; emphasis on terminology of fields in which students are interested; introduction to the history of the English Language and its relationship with other languages; knowledge of Greek or Latin is not required. Typically Offered: Spring.

FLEN 270 Introduction to Greek and Roman Civilization (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
Ancient Greece and Rome have long been the subject of fascination and admiration. From classical Athenian democracy to the Roman army to the intellectual and dramatic creativity of these societies, Greece and Rome, for better or for worse, form an essential backdrop for understanding western civilizations. This is a survey course that examines the histories of ancient Greece and Rome through five thematic units. Each course theme forms one module. The course modules (i. e. thematic units) are intended to introduce you to key events, people, and themes that define not only the history of Greek and Roman civilizations, but also major scholarly approaches to the study of ancient history. The modules may include Greek and Roman society, gender and sexuality, ancient religions, political structures and beliefs, and military history.

FLEN 271 Gods, Heroes, and Monsters: Myth in the Ancient World (3 credits)

Cross-listed with FLEN 271
From Marvel to Hollywood to fantasy to literature, ancient myth weaves its way through modern life. But what were these myths like in their original form? What role did they play in the ancient world? How can we use them to understand ancient cultures? What lessons and themes can we still apply today? This class is intended to introduce students broadly to ancient mythology. We will dive into all the messy weirdness of ancient mythology, from heroic quests to resurrection stories, to gods behaving very badly. We will explore themes such as human-divine relationships, gods getting angry and punishing people, origin stories, sexuality and myth, and quests and adventure stories through five mytho-cultural groups: the Mesopotamians, Egyptians, Greeks, Romans, and Celts. You will then complete group research projects and presentations focused on a different mytho-cultural group: Norse/Germanic, Persian, culture of choice within African or African Diaspora groups, Chinese, Japanese, Indian (Hindu), culture of choice within the Indigenous Americas, Polynesian (Hawaiian, Samoan, Māori, Tongan), and Indigenous Australian. Typically Offered: Fall.

FLEN 298 (s) Internship (1-16 credits)

Credit arranged

FLEN 299 (s) Directed Study (1-16 credits)

Credit arranged

FLEN 307 Institutions of the European Union (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Cross-listed with POLS 307
A cross-cultural examination of the European Union, its history, evolution, and current functioning; social, cultural, and political differences among union partners; economic structure and demographics; business culture.

FLEN 313 French/Francophone Literature in Translation (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
Major modern French and Francophone authors in English translation; knowledge of French is not required. Typically Offered: Varies.

FLEN 315 French/Francophone Cinema in Translation (3 credits)

General Education: International
Representative works of French and Francophone cinema studied and discussed in English translation; knowledge of French is not required. (Spring, alt/years) Typically Offered: Spring (Odd Years).

FLEN 322 German Culture through Film (3 credits)

Representative works of German cinema studied and discussed in English translation; knowledge of German is not required.

FLEN 324 Topics in German Literature in Translation (3 credits, max 6)

General Education: Humanistic and Artistic Ways of Knowing, International
Major German-language authors in English translation; knowledge of German is not required.

FLEN 325 Contemporary Chinese Culture and Customs (1-3 credits, max 3)

This course focuses on contemporary trends in Chinese culture and customs in daily life, education, business, and foreign relations. Providing students with a basic understanding of Chinese geography, history, philosophy, and etiquette, this course is taught in English.

FLEN 326 Chinese Cinema in Translation (3 credits)

This course introduces students to China and Chinese culture through the lens of Chinese cinema. This class covers the major landmarks in Chinese film history and will help familiarize students with representative movements, directors, actors and actresses in the Chinese film industry. Students will also be introduced to basic Chinese phrases and concepts that will help further their appreciation of Chinese culture and artistic traditions. This course is taught in English.

FLEN 327 Chinese Literature in Translation (3 credits)

This course introduces students to important works of Chinese literature that have been translated into English. The intent of this course is to make these works more accessible to a Western, non-Chinese speaking audience. Students will study classical works to more contemporary writing by Chinese expatriates and Chinese American authors. This course is taught in English.

FLEN 331 Japanese Anime (3 credits)

General Education: International
General Education: International. Selected Japanese animated films are studied as cultural products; each film is situated in its socioeconomic, political, cultural, and/or historical contexts. Japanese language proficiency not required. Typically Offered: Fall (Even Years).

FLEN 390 Representation and Reality in Spanish Cinema (3 credits)

Examines how Spanish film represents contemporary issues such as immigration and identity for domestic and international audiences.

FLEN 391 Hispanic Film (3 credits)

General Education: International
Cross-listed with LAS 391
Open to all students. A maximum of 3 cr in FLEN 391 and FLEN 394 may be counted toward a major in Spanish. Genre, structure, and style of representative fiction and nonfiction films of Spain and Latin America. Typically Offered: Varies.

FLEN 394 Latin American Literature in Translation (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
A maximum of in FLEN 391 and FLEN 394 may be counted toward a major in Spanish. Major Spanish-language authors in English translation; knowledge of Spanish is not required.

FLEN 398 (s) Internship (1-16 credits)

Credits arranged

FLEN 400 (s) Seminar (1-16 credits)

Credit arranged

FLEN 401 Topics in Global Studies (3 credits)

Focuses on an issue related to international cultures, societies, geopolitics, history, economics, or other questions with a global dimension. In addition to common reading, viewing, and course assignments, students develop research projects over the course of the semester, focusing on the culture(s) of their specialization. Typically Offered: Spring.

FLEN 404 (s) Special Topics (1-16 credits)

Credit arranged

FLEN 498 (s) Internship (1-16 credits)

Credit arranged

FLEN 499 (s) Directed Study (1-16 credits)

Credit arranged

FLEN 501 (s) Seminar (1-16 credits)

Credit arranged

FLEN 502 (s) Directed Study (1-16 credits)

Credit arranged

FLEN 504 (s) Special Topics (1-16 credits)

Credit arranged

Forest and Sustainable Products (FSP)

FSP 100 Introduction to Forest and Sustainable Products (2 credits)

Examination of the forest and sustainable materials industries and bioenergy products. Discovery laboratory in the use of forest and sustainable materials, including waste streams, to create marketable products. One lecture and one three-hour lab per week.

FSP 201 Forest and Sustainable Products for a Green Planet (3 credits)

Introduction to various bioproducts derived from forest, plant, agriculture and marine; their environmental and economic benefits; and how these bioproducts affect our daily life and future. Course also explores green careers in Forest and Sustainable Products. Typically Offered: Fall.

FSP 203 (s) Workshop (1-16 credits)

Credit arranged

FSP 204 (s) Special Topics (1-16 credits)

Credit arranged

FSP 299 (s) Directed Study (1-16 credits)

Credit arranged

FSP 321 Properties of Forest and Sustainable Products (3 credits)

Physiology, structure, and physical and mechanical properties of wood and other natural cellulosic fibers.

FSP 400 (s) Seminar (1-16 credits)

Credit arranged

FSP 401 Undergraduate Research (1-3 credits, max 3)

Directed undergraduate research at the upper division level.

Prereqs: Junior or Senior standing.

FSP 403 (s) Workshop (1-16 credits)

Credit arranged

FSP 404 (s) Special Topics (1-16 credits)

Credit arranged

FSP 405 (s) Professional Development (1-16 credits)

Credit arranged. Credit earned in this course will not be accepted toward graduate degree programs.

FSP 425 Forest Products Marketing (3 credits, max 3)

Introduction to business-to-business and industrial marketing management from a forest products perspective in domestic and international markets, including marketing research and contemporary issues within the industry. Typically Offered: Fall and Spring.

FSP 436 Biocomposites (3 credits)

Joint-listed with FSP 536

Raw material, processes, properties, and their applications for a number of natural fiber and wood composites made of veneers, particles, and fibers. Additional projects and assignments required for graduate credit. Two half-day field trips. Two lectures and one 3-hour lab per week. (Fall only)

Prereqs: CHEM 101 and FSP 321; and CHEM 275 or CHEM 277.

FSP 438 Lignocellulosic Biomass Chemistry (1 credit)

The chemistry of lignocellulosic fiber (natural fiber and wood) formation and structure. Two lectures a week for the first half of the semester. Typically Offered: Varies.

Prereqs: CHEM 101 or CHEM 111; and CHEM 275 or CHEM 277.

Cooperative: open to WSU degree-seeking students.

FSP 444 Primary Forest Products Manufacturing (3 credits)

Raw materials, procurement, production methods, drying product specifications, and grading for primary products made from wood and cellulosic fiber including lumber, plywood, poles, and energy products; plant layout, machines, and systems analysis; plant tours. Two lectures and one 5-hour lab per week.

Prereqs: FSP 321

FSP 450 Biomaterials Deterioration and Protection (3 credits)

Joint-listed with FSP 550

Biotic and abiotic agents that deteriorate biomaterials; biocidal and nonbiocidal methods used to protect biomaterials from deterioration; biodegradable materials and their applications. Additional projects and assignments required for graduate credit. Two one-hour lectures and one three-hour lab per week. Recommended preparation: FSP 321.

Prereqs: Permission

FSP 473 ECB Senior Presentation (1 credit)

General Education: Senior Experience

Cross-listed with FISH 473, FOR 473

, NRS 473, REM 473, WLF 473. Reporting and presenting the senior project (thesis or internship); taken after or concurrently with REM 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).

Prereqs: Instructor Permission

FSP 491 Biomaterial Product and Process Development Lab (2 credits)

General Education: Senior Experience

Lab to accompany FSP 495. One 3-hour lab per week. (Spring only)

Prereqs: ECON 201 or ECON 202; and FSP 495.

FSP 495 Product Development and Brand Management (3 credits)

General Education: Senior Experience

Cross-listed with MKTG 495

This course examines product development strategy and the management of brands. Topics will include strategic intent of product development, the process of product development (ideation through post product launch evaluation), market and financial feasibility of product development, trends in product development, and managing brands (strategic brand management and managing brand equity). Typically Offered: Fall, Spring and Summer.

Prereqs: ECON 201, ECON 202, or ECON 272; and MKTG 321.

Coreqs: MKTG 321

FSP 498 Forest and Sustainable Products Internship (1-16 credits)

Credit arranged. Supervised field experience with an appropriate organization. Graded P/F.

FSP 499 (s) Directed Study (1-16 credits)

Credit arranged. For the individual student; conferences, library, field, or lab work.

FSP 500 Master's Research and Thesis (1-16 credits)

Credit arranged

FSP 501 (s) Seminar (1-16 credits)

Credit arranged. Major philosophy, management, and research problems of forest products industries; presentation of individual studies on assigned topics.

FSP 502 (s) Directed Study (1-16 credits)

Credit arranged

FSP 503 (s) Workshop (1-16 credits)

Credit arranged. Selected topics in the conservation and management of natural resources.

FSP 504 (s) Special Topics (1-16 credits)

Credit arranged

FSP 505 (s) Professional Development (1-16 credits)

Credit arranged. Credit earned in this course will not be accepted toward graduate degree programs.

FSP 536 Biocomposites (3 credits)

Joint-listed with FSP 436

Raw material, processes, properties, and their applications for a number of natural fiber and wood composites made of veneers, particles, and fibers. Additional projects and assignments required for graduate credit. Two half-day field trips. Two lectures and one 3-hour lab per week. (Fall only)

Prereqs: CHEM 101 and FSP 321; and CHEM 275 or CHEM 277.

FSP 538 Lignocellulosic Biomass Chemistry (3 credits)

The chemistry of lignocellulosic fiber (natural fiber and wood) formation and structure. Two lectures a week for the first half of the semester. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

FSP 550 Biomaterials Deterioration and Protection (3 credits)

Joint-listed with FSP 450

Biotic and abiotic agents that deteriorate biomaterials; biocidal and nonbiocidal methods used to protect biomaterials from deterioration; biodegradable materials and their applications. Additional projects and assignments required for graduate credit. Two one-hour lectures and one three-hour lab per week. Recommended preparation: FSP 321.

Prereqs: Permission

FSP 598 (s) Internship (1-16 credits)

Credit arranged

FSP 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

FSP 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Prereqs: Admission to the doctoral program in Natural Resources and Department Permission.

Forest Resources (FOR)

FOR 102 Introduction to Forest Management (2 credits)

Intro to forestry, current management issues, timber and non-timber resources, educational and professional opportunities. Includes regional field trips ranging in length from one afternoon to one weekend. Cooperative: open to WSU degree-seeking students.

FOR 103 Introduction to Computer Applications in Natural Resources (1 credit)

Introduction to basic software programs used in natural resources, including Microsoft Office. Typically Offered: Fall.

FOR 152 Careers in Forest Nursery Management and Technology (1 credit)

Course promotes student success in college and preparation for a career in forest nursery management and technology, and explores personal and career interests, needs, and goals. Students are introduced to a variety of careers in the forest nursery industry through class presentations and guest speakers. Typically Offered: Fall.

FOR 153 Forest Nurseries Tour (1 credit)

Course provides opportunity for students to experience commercial forest nursery operations across the Northern Rockies and learn about the challenges and opportunities in working for, owning, and managing a commercial forest nursery. May involve field trips. Typically Offered: Fall.

FOR 200 (s) Seminar (1-16 credits)

Credit arranged

FOR 201 Industrial Forest Management and Sawmill Tour (2 credits)

Field tour-based course examining the logging and forest products industries. Course will expose students to timber harvesting and forest product manufacturing processes and careers throughout the Inland Northwest. Introductory scaling, defecting, and merchandizing for harvested timber will also be covered through lecture and field exercises. Typically Offered: Fall.

FOR 203 (s) Workshop (1-16 credits)

Credit arranged

FOR 204 (s) Special Topics (1-16 credits)

Credit arranged

FOR 207 Properties of Artificial Growth Media (1 credit)

Laboratory course that examines the physical and chemical properties of artificial growth media used in forest nurseries, with a focus on understanding the characteristics, functions, and use of common types of growth media for forest and rangeland plants. Recommended preparation: SOIL 205 The Soil Ecosystem. Typically Offered: Spring.

FOR 210 Winter Harvesting (1 credit)

This is an introduction to chainsaw safety and operation, precision timber falling, and winter harvesting methods taught as an intermediate-level forestry field practicum during the final week of winter break. All day classes take place on the University of Idaho Experimental Forest. Safety instruction covers methods taught in state and federal land agencies and other popular faller safety programs.

Prereqs: Instructor Permission

FOR 211 Logging Safety and Emergency Preparedness (2 credits)

Logging safety and emergency preparedness is an integral component of all forest operations due to the inherent risk associated with the logging, trucking, and forest products industries. Course examines the human and environmental components of risk management, worker safety and emergency response, including personal wellness, safety considerations for mechanized logging operations, natural hazard recognition and mitigation, and workplace communications. Industry specific first-aid and CPR training will also be covered. Typically Offered: Fall.

FOR 220 Forest Biology & Dendrology (3 credits)

Phylogenetic approach to understanding the systematics, morphology, geography, and ecology of the major species of North American woody plants. Includes identification and classification of important tree species of North American and other important woody plants of the Pacific Northwest and northern Rocky Mountains. Recommended preparation BIOL 114. Typically Offered: Fall.

FOR 221 Principles of Ecology (3 credits)

Cross-listed with REM 221, WLF 220

Principles of ecology and their relevance to management of natural resources. Major topics include plant and wildlife population, community, ecosystem, and landscape level processes and how these processes interact with the environment. Exploration of how ecosystems are affected by humans and global change. Introduction to the types of questions asked by ecologists, the principal concepts and theories that guide ecological inquiry, and the methods that are used to answer ecological questions. Both terrestrial and aquatic systems are considered. Typically Offered: Spring.

Prereqs: BIOL 102/BIOL 102L or BIOL 114 or BIOL 115 or PLSC 205; or Permission.

FOR 230 Forest Operations (3 credits)

Joint-listed with FOR 430

Overview of the primary equipment and harvesting systems used in modern forest operations, including field design, layout, and administration of timber sales, logging production and cost estimation, laws, and certification. A brief introduction to quantitative forest planning methods is also provided. There are 2-3 early morning trips and one Saturday field lab. Requires additional project for upper-division credit. Typically Offered: Fall.

Prereqs: FOR 102, and PHYS 100/PHYS 100L or PHYS 111/PHYS 111L
Prereqs or

Coreqs: MATH 144 Cooperative: open to WSU degree-seeking students

FOR 231 Low Volume Forest Roads (2 credits)

Joint-listed with FOR 431

Design and field layout of access roads for forest management, through a combination of field labs and use of modern, GIS-based forest road engineering software. Field study includes design of at least one current industry or agency forest road design project. There are 2-3 early morning trips and one Saturday field lab. Requires additional project for upper-division credit. Typically Offered: Fall (Odd Years).

Coreqs: FOR 430 or Permission Prereqs or Coreqs: MATH 144

FOR 235 Society and Natural Resources (3 credits)

General Education: Social and Behavioral Ways of Knowing

Cross-listed with NRS 235

An exploration of how people use, value, manage, impact, and are affected by natural resources; course emphasizes social and economic realities and political and legal processes in a context of current and historical natural resource issues. Two lectures and one 1-hr small discussion group meeting per week.

FOR 236 Cable Systems (2 credits)

Joint-listed with FOR 436

Overview of the major cable logging systems. Trigonometry and physical mechanics of cable systems, including analysis of forces, tensions, and payload capacity. Field layout and analysis of cable corridors using small yarders on the UI Experimental Forest using integrated field planning and GIS-based cable system design software. There are 2-3 early morning trips and one Saturday field lab. Requires additional project for upper-division credit. Typically Offered: Spring.

Prereqs: FOR 230

FOR 251 Nursery Insects and Disease (2 credits)

Course examines the principles and practices of diagnosing and treating common insects and diseases affecting forest and rangeland plants in nurseries and greenhouses, including the application of pesticides. Typically Offered: Fall.

FOR 255 Nursery Irrigation and Fertilization (1 credit)

An introduction to nursery irrigation and fertilization practices commonly found in forest tree seedling and native plant nurseries. This course aims to provide some of the important theory behind the practices used every day in successful crop production. The course will be taught by faculty and staff at the UI Pitkin Forest Nursery and managed as part of the annual Position Description process. The course is developed and is presently offered online.

FOR 257 Sustainable Nursery Design and Management (3 credits)

Course focuses on the principles of sustainable nursery management, marketing and production operations of commercial nurseries with an emphasis on nursery and greenhouse facilities and practices necessary to produce bare root or container nursery stock. Typically Offered: Spring.

FOR 272 Forest Surveying and Mapping (3 credits)

Methods and techniques for surveying, mapping, and navigation in forested environments using traditional tools and advanced technologies, including field surveying, orienteering, industry relevant GIS resources, and real-time mobile mapping processes and technologies. Typically Offered: Spring.

FOR 274 Forest Measurement and Inventory (3 credits)

Practical techniques for the design and execution of vegetation measurements for the inventory of forests, understory, and fire-fuels. Course offered in fall and summer. Summer offering is an intensive three-week course held at the University of Idaho McCall Field Campus in McCall, Idaho. Field trips occur frequently to provide hands-on training in forest measurement techniques. Typically Offered: Fall and Summer.

Prereqs or Coreqs: MATH 143 and MATH 144; or SAT math score of 610 or above, or ACT math score of 27 or above

FOR 275 Forestry Resource Sampling (2 credits)

Principles and practice of natural resource inventory, forest sampling and data analysis techniques, LIDAR, forest growth, and quantitative decision support. Lab analysis examples and use of Excel and statistical packages are integrated into lectures. Field trips required.

Coreqs: FOR 274 and STAT 251

FOR 293 Business of Forestry (2 credits)

Joint-listed with FOR 493

Technical assessment of forestry from a business perspective at the stand and landscape levels, including an examination of factors that affect public and private landowner decision making regarding management of timberland. Course integrates concepts from silviculture, forest management, and natural resource policy into decision making framework. Requires additional project for upper-division credit.

FOR 296 Forest Harvesting Practicum (3 credits)

Field-based practicum focused on the planning, implementation, and assessment of manual and mechanized forest operations. Operational considerations for meeting silvicultural prescriptions and maintaining sustainable forest practices will be examined. This course also offers an introduction to the operation and servicing of modern mechanized logging equipment. Classes and field exercises will occur primarily on the University of Idaho Experimental Forest. Typically Offered: Spring.

Prereqs: FOR 211

FOR 298 Forest Technology Internship (1 credit)

Paid or unpaid employment in forest industry at an approved facility or organization structured to provide varied occupational experiences.

FOR 299 (s) Directed Study (1-16 credits)

Credit arranged

FOR 310 Indigenous Culture and Ecology (3 credits, max 9)

This course is designed to explore the challenge for Indigenous and mainstream science of balancing traditional and modern world cultures at odds with one another through an understanding of multiple ways of knowing with respect to natural resources and ecological understanding. The course covers a range of themes including decolonizing methodologies, Indigenous research methodologies, and Indigenous statistics. Case-studies, collaborations with local tribes, and field trips are used to explore course themes.

Prereqs: REM 221/FOR 221/ WLF 220 and FOR 235/NRS 235

FOR 324 Forest Regeneration (3 credits)

Natural and artificial regeneration of forest ecosystems; reproduction methods; selection of seed source and stock type; nursery cultural practices; tree improvement; site preparation methods to establish regeneration. One lecture and one 2-hr lab per week. Two all day field trips. A semester-long project requires time spent weekly in a nursery to regularly monitor plant development under varied environmental conditions (approximately 45 hours over the 18-week spring semester in addition to lectures, labs and out-of-class studying). Cooperative: open to WSU degree-seeking students.

Coreqs: FOR 274

FOR 330 Terrestrial Ecosystem Ecology (4 credits)

Ecosystem ecology integrates the interactions between organisms and their environment as a complex system, quantifying the biological and physical factors controlling ecosystem processes. Emphasis is on terrestrial ecosystems, particularly carbon, water, and nutrient cycling. Process-based modeling is used to illustrate effects of complex interactions on carbon budgets. Applications include effects of disturbance (fire, pests, climate change, and land management) on ecosystem productivity, biodiversity, and resilience. Two lectures and one lab per week, including field trips.

Prereqs: MATH 143 or MATH 160; PHYS 100 and PHYS 100L or PHYS 111 and PHYS 111L; and FOR 221 or REM 221 or WLF 220 or BIOL 213 or PLSC 102

FOR 375 Fundamentals of Geomatics (3 credits)

Cross-listed with NRS 375

Methods and techniques for obtaining quantitative and qualitative geospatial information from aerial and satellite images, maps, and the Global Positioning System for input into geographic information systems. Analysis of geospatial data for mapping, monitoring and planning associated with all aspects of natural resource management. Two lectures and one 2-hour lab per week. Typically Offered: Fall, Spring.

Prereqs: College Algebra

FOR 398 (s) Renewable Natural Resources Internship (1-16 credits)

Credit arranged. Supervised field experience with an appropriate public or private agency. Required for cooperative education students. Graded P/F.

Prereqs: Permission of department

FOR 400 (s) Seminar (1-16 credits)

Credit arranged

FOR 403 (s) Workshop (1-16 credits)

Credit arranged

FOR 404 (s) Special Topics (1-16 credits)

Credit arranged

FOR 405 (s) Professional Development (1-16 credits)

Credit arranged. Professional education and enrichment of forestry personnel. Credit earned in this course will not be accepted toward graduate degree programs but may be used for undergraduate programs.

Prereqs: Permission

FOR 410 Fire Effects and Management (3 credits)

Understanding fire effects is a very important part of fire management. This course will discuss the direct and indirect effects of fire on humans, soils, water, plants, and animals. In addition to learning the concepts surrounding fire effects, students will complete a literature review on an area of interest and will experience fire effects firsthand in the field. Recommended preparation – FOR 221 or WLF 220.

FOR 424 Silviculture Principles and Practices (4 credits)

General Education: Senior Experience

Theory underlying silvicultural practices to control forest composition and growth, including forest stand dynamics, tree growth and quality, and growth-density relationships. Study of intermediate stand treatments and reproduction methods. Final project required involving field data collection and forest modeling to develop and mark silvicultural prescriptions. 3 hours of lecture and 2 hours of lab per week.

Prereqs: Senior standing and FOR 274, FOR 220 or other plant identification course, FOR 324, FOR 330, or Instructor Permission

FOR 430 Forest Operations (3 credits)

Joint-listed with FOR 230

Overview of the primary equipment and harvesting systems used in modern forest operations, including field design, layout, and administration of timber sales, logging production and cost estimation, laws, and certification. A brief introduction to quantitative forest planning methods is also provided. There are 2-3 early morning trips and one Saturday field lab. Requires additional project for upper-division credit. Typically Offered: Fall. Prereqs or

Coreqs: MATH 144 Cooperative: open to WSU degree-seeking students

FOR 431 Low Volume Forest Roads (2 credits)

Joint-listed with FOR 231

Design and field layout of access roads for forest management, through a combination of field labs and use of modern, GIS-based forest road engineering software. Field study includes design of at least one current industry or agency forest road design project. There are 2-3 early morning trips and one Saturday field lab. Requires additional project for upper-division credit. Typically Offered: Fall (Odd Years).

Coreqs: FOR 430 or Permission Prereqs or Coreqs: MATH 144

FOR 436 Cable Systems (2 credits)

Joint-listed with FOR 236

Overview of the major cable logging systems. Trigonometry and physical mechanics of cable systems, including analysis of forces, tensions, and payload capacity. Field layout and analysis of cable corridors using small yarders on the UI Experimental Forest using integrated field planning and GIS-based cable system design software. There are 2-3 early morning trips and one Saturday field lab. Requires additional project for upper-division credit. Typically Offered: Spring.

FOR 443 Forest Production Ecology (3 credits)

Joint-listed with FOR 543

Considers how plant production, carbon and energy accumulation are influenced by availability of light, water and nutrient resources. Includes study of use efficiency, allocation, and turnover of captured resources at organ, tree and stand level that are applicable to increased management intensity. Examples emphasize forests but include other wildland and agricultural ecosystems. Stand-level process models are used to synthesize understanding of environmental and management factors controlling forest production. Two 1-hour lectures and one 3-hour lab per week. Requires additional research project and presentation for graduate credit. Typically Offered: Varies.

Prereqs: FOR 221, WLF 221, or REM 221; SOIL 205, SOIL 206

FOR 443L Forest Production Ecology Lab (1 credit)

Joint-listed with FOR 543L

Practical lab activities associated with forest production ecology and companion laboratory with FOR 443. One 3-hour lab per week. Requires additional effort for graduate credit. Typically Offered: Fall.

Prereqs or Coreqs: FOR 443

FOR 444 Prescribed Fire For Ecologically-Based Management (2-3 credits)

Learn about prescribed burning in support of ecologically-based management through reading, discussion and participating in hands-on service learning, planning, conducting and monitoring prescribed burns, reading and discussing local ecology and management, working collaboratively, and developing skills in fire management. Course requires travel as well as pre-, during-, and post-travel writing, discussion, and presentations. Typically Offered: Spring.

Prereqs: Instructor Permission

FOR 447 Woody Plant Physiology (3 credits)

Joint-listed with FOR 547

Examine woody plant interactions with their environment and tolerance or avoidance of stress. This course covers quantitative analysis of environmental biophysics, gas exchange, water relations and nutrition in woody plants. Students will also learn to use all of the major methods/equipment used in woody plant physiology research. Includes two weekly 1-hour lectures and one weekly 3-hour lab. Students registered for 500-level credit must complete a research project and presentation in addition to the requirements for the 400-level credit.

FOR 448 Plant Population Ecology (4 credits)

Ecological aspects of plant form and reproduction; demography and population modeling; species interactions, including competition, mutualism, and herbivory. Typically Offered: Fall.

Prereqs: FOR 221/WLF 220

FOR 460 Mountain Ecology (3 credits)

Joint-listed with FOR 560

This interdisciplinary course uses frameworks grounded in ecosystem ecology and insular biogeography theory to examine the influence of mountains on population and community ecology, including interconnected social, biological, and physical components. There will be an emphasis on morphological, physiological, and behavioral adaptations of terrestrial and aquatic ecosystem. Other topics may include orogeny, geomorphology, human dimensions, biogeography, diversification, adaptive pressures, speciation, climatology, and climate change. Topics presented will apply to mountain systems universally; however, much of the emphasis is placed on issues within the Western United States. Additional projects and assignments required for graduate credit. Typically Offered: Fall and Spring.

FOR 462 Watershed Science and Management (3 credits)

Influence of land management practices on hydrologic processes, water quality, and riparian habitat w/emphasis on wildland watersheds. One day field trip.

Prereqs: MATH 143; and PHYS 100/PHYS 100L or PHYS 111/PHYS 111L, or high school equivalent.

FOR 468 Forest and Plant Pathology (2 credits)

A survey of plant diseases. Emphasis on forest trees and other woody plants. Organisms that cause diseases. Strategies to minimize negative effects. Symbiotic roles of microbes in plants. Two hours of lecture, and two hours of lab per week, in addition to multiple field trips (as weather allows) to observe diseases and their effects. (Spring only)

Prereqs: FOR 220 and FOR 330

FOR 472 Remote Sensing of the Environment (4 credits)

Cross-listed with NRS 472

Current airborne and satellite systems, data acquisition on ground and from remote locations, instrumentation, imagery interpretation and digital analysis, applications for natural resource science and management. Two 75-minute lectures and one two-hour lab per week. Recommended Preparation: MATH 143. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

FOR 473 ECB Senior Presentation (1 credit)

General Education: Senior Experience

Cross-listed with FISH 473, FSP 473

, NRS 473, REM 473, WLF 473. Reporting and presenting the senior project (thesis or internship); taken after or concurrently with REM 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).

Prereqs: Instructor Permission

FOR 484 Forest Policy and Administration (2 credits)

Cross-listed with NRS 484

Evaluation of land and forest problems and policies in the U. S. ; analysis of current conditions and policies; historical development of governmental and private agencies concerned with the administration of forest conservation program. Recommended Preparation: FOR 235.

Prereqs: Junior standing.

FOR 490 The Resilient Landscape (3 credits)

Cross-listed with LARC 480

A capstone course addressing the concept of trade-offs in coupled social ecological technological systems, where landscapes and the communities they support are adaptive and evolving but the ideal is rarely attainable. This is a reading, critical thinking and discussion course with assessment based on class participation in a term project, problem solving, verbal and written communication, collegiality, and collaboration (Spring only).

Prereqs: ENGL 102 and Junior standing

FOR 493 Business of Forestry (2 credits)

Joint-listed with FOR 293

Technical assessment of forestry from a business perspective at the stand and landscape levels, including an examination of factors that affect public and private landowner decision making regarding management of timberland. Course integrates concepts from silviculture, forest management, and natural resource policy into decision making framework. Requires additional project for upper-division credit.

FOR 497 (s) Senior Thesis (1-4 credits, max 4)

Independently plan and conduct a thesis project; write and defend the thesis under supervision of an advisor.

Prereqs: Senior standing and minimum 3.20 GPA or Permission

FOR 498 (s) Renewable Natural Resources Internship (1-16 credits)

Credit arranged. Supervised field experience with an appropriate public or private agency. Required for cooperative education students.

Prereqs: Permission of department

FOR 499 (s) Directed Study (1-16 credits)

Credit arranged. For the individual student; conferences, library, field, or lab work.

FOR 500 Master's Research and Thesis (1-16 credits)

Credit arranged

FOR 501 (s) Seminar (1-16 credits)

Credit arranged. Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.

FOR 502 (s) Directed Study (1-16 credits)

Credit arranged

FOR 503 (s) Workshop (1-16 credits)

Credit arranged Selected topics in the conservation and management of natural resources.

Prereqs: Permission

FOR 504 (s) Special Topics (1-16 credits)

Credit arranged

FOR 505 (s) Professional Development (1-16 credits)

Credit arranged

FOR 514 Forest Biometrics (3 credits)

This course provides a broad overview of forest biometrics, including forestry-specific sampling approaches, development of allometric relations, and use of remote sensing datasets.

Prereqs: STAT 431 or equivalent

FOR 515 Physical Hydrology (3 credits)

A quantitative treatment of the physical processes that control water fluxes in the environment. Specific emphasis on evaporation, transpiration, snow processes and soil water flow. (Fall, alt/years)

FOR 516 Current Literature in the Hydrologic Effects of Forest Management (1 credit)

Evaluation and discussion of how management activities affect hydrologic processes and flow regimes in forested watersheds. Seminar based on primary literature. May take only once. (Spring, alt/years)

FOR 522 Belowground Processes (3 credits)

Belowground Processes considers current advancements in understanding of root growth and development, water and nutrient acquisition, rhizosphere functions, soil microbial community composition and functions, organic matter decomposition, and symbiotic associations between plants and microbes. Examples focus mainly on forest and wildland terrestrial ecosystems. Students learn various techniques for studying belowground processes and apply them in self-directed, hypothesis-driven projects. Offered every other year during fall semester.

Prereqs: Graduate standing or instructor permission

FOR 535 Remote Sensing of Fire (3 credits)

Joint-listed with FIRE 435

The course describes the state of the art algorithms and methods used for mapping and characterizing fire from satellite observations. The course will link the physical aspects of fire on the ground with the quantities that can be observed from remote sensing, and present an overview of the different aspects of environmental fire monitoring. The course will be accompanied by weekly lab sessions focused on the processing of satellite data from sensors used operationally for fire monitoring. This course assumes that you are familiar with the fundamental concepts of mathematics and physics, understand basic remote sensing techniques, and can use maps and GIS data layers. For graduate credit, additional literature review and a class project including evaluation of new, advanced technologies is required. (Spring) Typically Offered: Spring.

FOR 543 Forest Production Ecology (3 credits)

Joint-listed with FOR 443

Considers how plant production, carbon and energy accumulation are influenced by availability of light, water and nutrient resources. Includes study of use efficiency, allocation, and turnover of captured resources at organ, tree and stand level that are applicable to increased management intensity. Examples emphasize forests but include other wildland and agricultural ecosystems. Stand-level process models are used to synthesize understanding of environmental and management factors controlling forest production. Two 1-hour lectures and one 3-hour lab per week. Requires additional research project and presentation for graduate credit. Typically Offered: Varies.

FOR 543L Forest Production Ecology Lab (1 credit)

Joint-listed with FOR 443L

Practical lab activities associated with forest production ecology and companion laboratory with FOR 443. One 3-hour lab per week. Requires additional effort for graduate credit. Typically Offered: Fall.

Prereqs or Coreqs: FOR 443

FOR 546 Science Synthesis and Communication (3 credits)

This course is an online course only. Critically review science literature and write both brief and in-depth syntheses to address applied questions in science and management. Learn best practices for summarizing and communicating science effectively. Discuss challenges for application of science in management. Examples will focus on wildland fire science and management.

FOR 547 Woody Plant Physiology (3 credits)

Joint-listed with FOR 447

Examine woody plant interactions with their environment and tolerance or avoidance of stress. This course covers quantitative analysis of environmental biophysics, gas exchange, water relations and nutrition in woody plants. Students will also learn to use all of the major methods/equipment used in woody plant physiology research. Includes two weekly 1-hour lectures and one weekly 3-hour lab. Students registered for 500-level credit must complete a research project and presentation in addition to the requirements for the 400-level credit.

FOR 560 Mountain Ecology (3 credits)

Joint-listed with FOR 460

This interdisciplinary course uses frameworks grounded in ecosystem ecology and insular biogeography theory to examine the influence of mountains on population and community ecology, including interconnected social, biological, and physical components. There will be an emphasis on morphological, physiological, and behavioral adaptations of terrestrial and aquatic ecosystem. Other topics may include orogeny, geomorphology, human dimensions, biogeography, diversification, adaptive pressures, speciation, climatology, and climate change. Topics presented will apply to mountain systems universally; however, much of the emphasis is placed on issues within the Western United States. Additional projects and assignments required for graduate credit. Typically Offered: Fall and Spring.

FOR 584 Natural Resource Policy Development (3 credits)

This course is an online course only. The development of natural resource policy with emphasis on the policy process at the federal level in the U. S. ; the role of and interrelationships between staff, committees, agencies and elected officials; the relationship of science and scientists with policy and politicians in the development of natural resource policy, including preparation of testimony related to natural resource science and policy issues; implementation of policy within the natural resource agencies and judicial interpretation of major natural resource policies in the U. S. Recommended Preparation: An upper-division course in natural resource and/or environmental policy (Spring only)

FOR 597 (s) Practicum (1-16 credits)

Credit arranged

FOR 598 (s) Internship (1-16 credits)

Credit arranged

FOR 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

FOR 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Prereqs: admission to the doctoral program in Natural Resources and Department Permission

FOR 601 (s) Seminar (1-16 credits)

Credit arranged

FOR 698 Internship (1-16 credits)

French (FREN)

Vertically-related courses in this subject field are: FREN 101 - FREN 102 - FREN 201 - FREN 202. Any 300-level FREN course may be considered the terminal course for the related vertical sequence above. A maximum of 16 credits may be earned for vertical credit in any language in the School of Global Studies.

FREN 101 Elementary French I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Pronunciation, vocabulary, reading, spoken French, and functional grammar. Students identified by the instructor as having some degree of French proficiency must take the placement exam. Students with French experience who place higher than FREN 101 on the placement exam may not enroll in FREN 101, but may earn credit for FREN 101 by successfully completing a higher vertically-related course. Typically Offered: in the fall.

FREN 102 Elementary French II (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Pronunciation, vocabulary, reading, spoken French, and functional grammar. Typically Offered: Spring.

Prereqs: FREN 101 or placement exam

FREN 105 Beginning French Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the beginning French level. Graded P/F.

FREN 200 (s) Seminar (1-16 credits)

Credit arranged

FREN 201 Intermediate French I (4 credits)

General Education: International

Reading, grammar review, speaking, and writing. Typically Offered: Fall.

Prereqs: FREN 102 or placement exam

FREN 202 Intermediate French II (4 credits)

General Education: International

Reading, grammar review, speaking, and writing. Typically Offered: Spring.

Prereqs: FREN 201 or placement exam

FREN 204 (s) Special Topics (1-16 credits)

Credit arranged

FREN 205 Intermediate French Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the intermediate French level. Graded P/F.

FREN 299 (s) Directed Study (1-16 credits)

Credit arranged

FREN 301 Advanced French Grammar (3 credits)

General Education: International

Comprehensive review of French grammar. Recommended for students who wish to continue in upper-division French courses and for prospective teachers of French. (Fall, alt/years) Typically Offered: Fall (Odd Years).

Prereqs: FREN 202 or placement exam

FREN 302 Advanced French Writing Skills (3 credits)

General Education: International

Further development of writing skills in various kinds of writing. Recommended for students who wish to continue in upper-division French courses and for prospective teachers of French. Recommended Preparation: FREN 202. (Fall, alt/years) Typically Offered: Varies.

FREN 304 Connecting French Language and Culture (3 credits)

General Education: International

Practice of linguistic proficiencies within simulated cultural frames. Recommended Preparation: FREN 202. Typically Offered: Spring (Even Years).

FREN 307 French Phonetics (3 credits)

General Education: International
 Contrastive analysis; acquisition and corrective practice of sounds and intonation patterns; phonetic description and transcription.
 Recommended Preparation: FREN 202. (Spring, alt/years) Typically Offered: Varies.

FREN 308 Advanced French Conversation (3 credits)

General Education: International
 General Education: International. Further development of speaking skills; discussion on topics of cultural interest and current events.
 Recommended Preparation: FREN 202. Typically Offered: Fall (Odd Years).

FREN 316 French-English Translation Skills (3 credits)

Theory and practice of translation, French-English and English-French, using a variety of types of text. Recommended Preparation: FREN 202. (Fall, alt/years)

FREN 398 (s) Internship (1-16 credits)

Credit arranged

FREN 400 (s) Seminar (1-16 credits)

Credit arranged
Prereqs: Permission

FREN 404 (s) Special Topics (1-16 credits)

Credit arranged

FREN 407 French & Francophone Literatures (3 credits, max 9)

General Education: International
 For advanced students; representative works from various genres of French and Francophone literature. Recommended Preparation: Two 300-level French courses. Typically offered: Spring, every three years. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

FREN 408 French and Francophone Culture and Institutions (3 credits, max 9)

General Education: International
 For advanced students; contemporary social and political institutions in France and the Francophone world, with discussion on topics of current interest. Recommended Preparation: Two 300-level French courses. (Spring, every three years) Typically Offered: Varies.

FREN 419 French & Francophone Cinema (3 credits)

For advanced students; representative works from French and Francophone cinema. Recommended Preparation: Two 300-level French courses. (Spring, every three years)

FREN 449 (s) Practicum in Tutoring (1 credit, max 2)

Tutorial services performed by advanced students under faculty supervision. Graded P/F.

Prereqs: Department Permission

FREN 498 (s) Internship (1-16 credits)

Credit arranged

FREN 499 (s) Directed Study (1-16 credits)

Credit arranged

Genetics (GENE)

GENE 200 (s) Seminar (1-16 credits)

Credit arranged

GENE 207 Introduction to Biotechnology (3 credits)

Cross-listed with PLSC 207
 Offers an overview of modern biotechnology, focusing on basic concepts and applications of biotechnology with regards to plants, animals, environment and microorganisms, and medicine. Recommended preparation: CHEM 101 or CHEM 111. (Fall, alt/even years)

GENE 299 (s) Directed Study (1-16 credits)

Credit arranged

GENE 314 General Genetics (3 credits)

Principles of molecular genetics, microbial genetics, cytogenetics, qualitative genetics, quantitative genetics, and population genetics. (Spring only)

Prereqs: BIOL 115 or Permission

GENE 400 (s) Seminar (1-16 credits)

Credit arranged

GENE 440 Advanced Laboratory Techniques (4 credits)

Cross-listed with PLSC 440
 Intensive hypothesis-driven laboratory course that will prepare the student for research in molecular biology; emphasis on areas of microbial physiology, microbial genetics, immunology, and pathogenic microbiology. (Spring only)

Prereqs: BIOL 250.

GENE 488 Genetic Engineering (3 credits)

Cross-listed with PLSC 488
 Joint-listed with GENE 588 and PLSC 588
 Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)

Prereqs: GENE 314 or BIOL 310.

GENE 499 (s) Directed Study (1-16 credits)

Credit arranged

GENE 501 (s) Seminar (1-16 credits)

Credit arranged

GENE 502 (s) Directed Study (1-16 credits)

Credit arranged

GENE 588 Genetic Engineering (3 credits)

Cross-listed with PLSC 588
 Joint-listed with GENE 488 and PLSC 488
 Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)

Prereqs: GENE 314 or BIOL 310.

Geography (GEOG)

GEOG 100 Introduction to Planet Earth (3 credits)

General Education: Natural/Integrated Science
 Natural environment; nature, distribution, and relationships of climate, landforms, oceans, vegetation, hydrography, and soils. Three lectures and one 2-hour lab per week; may involve evening classes. Typically Offered: Fall and Spring.

GEOG 100L Introduction to Planet Earth Lab (1 credit)

Natural environment; nature, distribution, and relationships of climate, landforms, oceans, vegetation, hydrography, and soils. Three lectures and one 2-hour lab per week; may involve evening classes. Typically Offered: Fall, Spring.

GEOG 165 Human Geography (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 General Education: International and Social and Behavioral Ways of Knowing. Intro to geographical dimension in human behavior and how this is evident in population distribution, rural and urban land use, and social, economic, and political attributes of societies. Typically Offered: Varies.

GEOG 200 World Cultures and Globalization (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 Countries, regions, and peoples of the world; interrelationships between humans and their physical and cultural environments. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

GEOG 203 (s) Workshop (1-16 credits)

Credit arranged

GEOG 204 (s) Special Topics (1-16 credits)

Credit arranged

GEOG 220 The Geography of Middle Earth (3 credits)

The course will explore the various roles that geography and geographical thinking have had in Tolkien's master works and the ideas of imaginary worlds. It will cover the issues of landscape creation in an imagined environment as well as the nature of culture, language and civilization in Tolkien's realm. These ideas are transferable to real-world situations. The details of landscape, geology, biology, religion, politics and economics will also be discussed in the context of the various ethnolinguistic groups and geographically disparate groups. The approach will use humanistic geography, mythic metaphor and chorography as analytical tools.

GEOG 260 Introduction to Geopolitics (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 The course introduces students to contemporary approaches to geopolitics through the exploration of key geographic concepts and the ideas of structure and agency. Topics include terrorism, nationalism, militarism, borders, and environmental geopolitics. Current events are discussed to exemplify the concepts.

GEOG 299 (s) Directed Study (1-16 credits)

Credit arranged

GEOG 301 Meteorology (3 credits)

Atmospheric processes that produce weather; temperature; moisture, clouds, and precipitation; synoptic-scale weather; severe storms; weather instrumentation, weather maps, and forecasting; influences of weather on humans and impacts of humans on weather. (Fall only)

Prereqs: MATH 143 or equivalent

GEOG 313 Global Climate Change (3 credits)

Joint-listed with GEOG 513

Scientific basis of the climate system and global climate changes; process-based understanding of past, present and future climate change; natural and anthropogenic influences; interactions between climate, society and ecosystems; scientific review and politicization; climate change solutions and opportunities. Students in GEOG 513 will be required to solve additional quantitative problem sets and synthesize journal articles. (Fall only)

GEOG 317 Tree Rings and Environmental Change (3 credits)

Joint-listed with GEOG 517

Principles, techniques, and interpretation in tree-ring science.

Applications in climate, ecology, forestry, and earth sciences. The course objectives are (1) to become proficient with the field and laboratory skills commonly used in tree-ring research, (2) to develop an understanding of the diversity of the applications of tree-ring science, and (3) to apply the techniques and knowledge learned in the course in addressing a specific topic of interest within the broad realm of geographic research. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students. Typically Offered: Spring.

GEOG 330 Urban Geography (3 credits)

Joint-listed with GEOG 531

Theory and models of the functions, origin, development, structure, and distribution of cities; land-use and housing, globalization and cities, neighborhood transition, urban economic development, and geographic aspects of city planning. Also considers urban social differences, inequality, and conflicts over the uses and meanings of city space. Graduate students are required to synthesize journal articles and complete an additional independent research paper.

GEOG 345 Global Economic Geography (3 credits)

Joint-listed with GEOG 545

An overview of major developments and contemporary debates in the economic geography literature; economic globalization, the spatial dimensions of resource use, agriculture, industry, and post-industry landscapes, economic aspects of land-use change, location theory and case studies. Additional projects required for graduate credit.

GEOG 350 Sustainability of Global Development (3-4 credits)

General Education: International

Joint-listed with GEOG 550

Geographic appraisal of resource problems and development potentials of the Third World. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit. Typically Offered: Fall and Spring. Cooperative: open to WSU degree-seeking students.

GEOG 360 Population Dynamics and Distribution (3-4 credits)

General Education: International

Effects of fertility, mortality, and migration on population size and distribution; demographic trends in U. S. and other societies and how these relate to economic, political, environmental, and other factors. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit. (Spring only)

GEOG 365 Geopolitics and Conflict (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Joint-listed with GEOG 565

Surveys the geographic distribution of political processes, actions, and outcomes at variety of spatial scales - international, national, and local. Topics include origins of the modern territorial state, conflicts over access to and use of space, access to natural resources, nationalism, elections, democratization, globalization, terrorism, and the politics of identity. Graduate students are required to complete an additional independent research paper. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

GEOG 385 Foundations of GIS (3 credits)

Intro to basic concepts and applications of geographic information systems (GIS), lab exercises on PC-based GIS packages. Two lectures and 2 hours of lab per week. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall, Spring.

Prereqs: basic knowledge of PC-based operating system.

GEOG 390 Cartographic Design & Geovisualization (3 credits)

Map projections, map generalization, cartographic design, map symbology, and typography; statistical, isarithmic and multivariate mapping; static versus dynamic mapping; interactive and internet mapping; cartographic animation; 2 hours of lab per week. (Spring only)
Prereqs: GEOG 385

GEOG 400 (s) Seminar (1-16 credits)

Credit arranged

GEOG 401 Climatology (3 credits)

Joint-listed with GEOG 512

Physical basis for climatic processes and patterns; mechanics of global atmospheric circulation; radiation balance and heat budget of the earth; models of weather patterns and climate. Additional assignments and quantitative exercises required for graduate credit. (Spring, alt/years)

GEOG 402 GIS Skills Development (1-3 credits, max 6)

Hands-on skills development in GIS and related technologies. Primary topics vary by semester, but may include topics such as GPS/GIS integration, web-based GIS, project management and cartographic design. May be taken for credit multiple times.

GEOG 403 (s) Workshop (1-16 credits)

Credit arranged

GEOG 404 (s) Special Topics (1-16 credits)

Credit arranged

GEOG 407 Spatial Analysis and Modeling (3 credits)

Joint-listed with GEOG 507

Introduces the basic theories and methods of spatial analysis used for statistical modeling and problem solving in human and physical geography. The special nature of spatial data (point, continuous, and lattice) in the social and physical sciences is emphasized. Topics include point pattern analysis, spatial autocorrelation analysis, spatial multivariate regression, local indicators of spatial association, and geographically weighted regression. Extra oral and/or written assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 431 or permission

GEOG 410 Biogeography (3 credits)

Geographic distributions of plant and animal species, and causes of patterns, including climate, geology, speciation, extinction, and migration. Typically Offered: Spring.

Prereqs: GEOG 100/GEOG 100L or FOR 221 or WLF 220. Cooperative: open to WSU degree-seeking students.

GEOG 411 Natural Hazards and Society (3 credits)

Overview of the geophysical conditions associated with the development of natural hazards including social science principles and methodologies for addressing critical questions relating to managing the vulnerability and risks associated with various natural hazards.

GEOG 414 Socioeconomic Applications of GIS (3 credits)

This course explores the use of geographic information systems (GIS) in various socioeconomic research fields including but not limited to urban planning, transportation, public health, environmental justice, crime analysis, and retail/business location etc. A major goal of this course is to teach students how to integrate geographical information techniques and data analytics with their future or ongoing research and real-world applications in the fields of social sciences. The course will be a combination of lectures and labs. The basic concepts, methodologies, and theories will be introduced in the lecture, and the lab sections are designed to give students hands-on experience using ArcGIS to complete a series of real-world projects.

Prereqs: GEOG 385 or equivalent

GEOG 420 Land, Resources, and Environment (3 credits)

Social, legal, cultural, political, and economic aspects of land-use control both in the United States and worldwide. Contrasts are made between indigenous and contemporary cultures within a sustainable geography-of-limits and political ecology framework. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall.

GEOG 424 Hydrologic Applications of GIS and Remote Sensing (3 credits)

Joint-listed with GEOG 524

Concepts of area-based hydrologic modeling and assessment and the various types of spatially distributed information commonly used in these activities, such as topographic data, vegetation cover, soils and meteorologic data. Hands-on experience in manipulating these types of data sets for hydrologic applications via weekly ArcGIS lab exercises. Additional project work required for graduate credit. Recommended Preparation: FOR 462, BE 355, or CE 325; or equivalent. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall.

Prereqs: GEOG 385 or FOR 375.

GEOG 430 Climate Change Ecology (3 credits)

Climate change impacts on ecosystems, plants, and animals; feedbacks to climate change; climate change mitigation related to ecosystems and species. Typically Offered: Spring.

Prereqs: BIOL 114 or ENVS 101 or GEOG 100 or FOR 221/REM 221/WLF 220 or Instructor Permission Cooperative: open to WSU degree-seeking students.

GEOG 435 Climate Change Mitigation (3 credits)

Joint-listed with GEOG 535

Overview of the sources and magnitude of greenhouse gas (GHG) emissions at various scales from international to local; barriers to and options for reducing GHG emissions via new energy sources, increased efficiency, capture of wasted energy and land management practices. For graduate credit, a major independent project is required as well as additional assignments. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall.

GEOG 455 Societal Resilience and Adaptation to Climate Change (3 credits)

Consequences of human causes, mitigation and adaptations, community resilience strategies, and policy implications to human impacts of global climate change. Concentration on social science issues including opportunities and constraints for resilience and adaptation to global climate change. Recommended Preparation: GEOG 411.

GEOG 475 Intermediate GIS (3 credits)

Course covers in-depth geographic information systems models and applications. Topics include network analysis, watershed analysis, spatial interpolation, terrain mapping and analysis, 3D visualization, and GIS modeling. Students develop spatial analysis and modeling skills to solve real-world problems. Typically Offered: Spring.

Prereqs: GEOG 385

Coreqs: STAT 251 Cooperative: open to WSU degree-seeking students

GEOG 479 GIS Programming (3 credits)

This course introduces students to basic computational concepts using Python, an object-oriented scripting language, for data processing, analysis and application development. Contemporary research in analytical geography has placed an increasing demand on the computational skills of its practitioners. The advances in spatial data analysis and geographical modeling have also largely out-paced the capabilities of standard statistical software. At the same time, the multidisciplinary nature of the spatial science often translates into the need to deal with disparate data sources, formats and programming languages. As such, students undertaking research are often confronted with a daunting set of tasks that are seldom covered in an integrated fashion in course work. This course is designed to address this situation. Typically Offered: Fall.

Prereqs: GEOG 475 or by instructor permission. Cooperative: open to WSU degree-seeking students.

GEOG 483 Remote Sensing IMAGE ANALYSIS/GIS Integration (3 credits)

Joint-listed with GEOG 583

Concepts and tools for the processing, analysis, and interpretation of digital images from satellite and aircraft-based sensors. The integration of remotely sensed data and the other spatial data types within Geographic Information Systems. Additional assignments and exams required for graduate credit. Two lectures and 2 hours of lab per week. Cooperative: open to WSU degree-seeking students. Typically Offered: Spring.

Coreqs: GEOG 385 or FOR 375 or equivalent

GEOG 487 (s) Topics in Geospatial Analysis (3 credits, max arranged)

Joint-listed with GEOG 587

Current topics and applications in remote sensing, GIS, and/or spatial analysis. Topics to vary by instructor and current trends in the field. Recommended preparation: At least 2 courses in GIS and/or 1 in remote sensing, depending on topic. Additional course project required for graduate credit.

GEOG 488 Geography of Energy Systems (3 credits)

This course examines geographic dimensions associated with the production, distribution, acquisition, consumption and storage of energy. Geographic tools and techniques will be used to analyze, understand and deconstruct complexity and nuance across various modes of production, current topics and challenges along with future considerations such as transitioning to renewable energy sources. The course will split time between classroom settings, field trips to energy installations on campus and across the Inland Northwest, in addition applied learning activities.

GEOG 493 Senior Capstone in Geography (3 credits)

General Education: Senior Experience

A capstone course in which students integrate their knowledge of human and physical geography, as well as geographic techniques, to propose solutions to real-world problems. Students gain experience in working in small groups and in written and oral presentation of project results, and will be evaluated with respect to the skills acquired in their degree program. Topics may include, but are not limited to, issues such as sustainable development in rural communities, global and regional food and energy distribution, quantifying and analyzing global or regional indicators of environmental and/or societal trends. Open to Senior geography majors or to nonmajors with Instructor Permission.

Prereqs: Department of Geography Majors or Permission

GEOG 498 (s) Internship (1-16 credits)

Credit arranged.

GEOG 499 (s) Directed Study (1-16 credits)

Credit arranged

GEOG 500 Master's Research and Thesis (1-16 credits)

Credit arranged

GEOG 501 (s) Seminar (1-16 credits)

Credit arranged

GEOG 502 (s) Directed Study (1-16 credits)

Credit arranged

GEOG 503 (s) Workshop (1-16 credits)

Credit arranged

GEOG 504 (s) Special Topics (1-16 credits)

Credit arranged

GEOG 507 Spatial Analysis and Modeling (3 credits)

Joint-listed with GEOG 407

Introduces the basic theories and methods of spatial analysis used for statistical modeling and problem solving in human and physical geography. The special nature of spatial data (point, continuous, and lattice) in the social and physical sciences is emphasized. Topics include point pattern analysis, spatial autocorrelation analysis, spatial multivariate regression, local indicators of spatial association, and geographically weighted regression. Extra oral and/or written assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 431 or permission

GEOG 513 Global Climate Change (3 credits)

Joint-listed with GEOG 313

Scientific basis of the climate system and global climate changes; process-based understanding of past, present and future climate change; natural and anthropogenic influences; interactions between climate, society and ecosystems; scientific review and politicization; climate change solutions and opportunities. Students in GEOG 513 will be required to solve additional quantitative problem sets and synthesize journal articles. (Fall only)

GEOG 517 Tree Rings and Environmental Change (3 credits)

Joint-listed with GEOG 317

Principles, techniques, and interpretation in tree-ring science.

Applications in climate, ecology, forestry, and earth sciences. The course objectives are (1) to become proficient with the field and laboratory skills commonly used in tree-ring research, (2) to develop an understanding of the diversity of the applications of tree-ring science, and (3) to apply the techniques and knowledge learned in the course in addressing a specific topic of interest within the broad realm of geographic research. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students. Typically Offered: Spring.

GEOG 524 Hydrologic Applications of GIS and Remote Sensing (3 credits)

Joint-listed with GEOG 424

Concepts of area-based hydrologic modeling and assessment and the various types of spatially distributed information commonly used in these activities, such as topographic data, vegetation cover, soils and meteorologic data. Hands-on experience in manipulating these types of data sets for hydrologic applications via weekly ArcGIS lab exercises. Additional project work required for graduate credit. Recommended Preparation: FOR 462, BE 355, or CE 325; or equivalent. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall.

Prereqs: GEOG 385 or FOR 375.

GEOG 525 Graduate GIS Fundamentals (3 credits)

Introductory graduate level course in Geographic Information Systems (GIS). Students will learn how to use GIS to manage, integrate, analyze, and visualize geospatial data and information. GIS can be used to explore patterns and relationships in geographic data, seek explanations, and develop solutions to pressing problems. The basic concepts of GIS will be introduced in the lecture, and the lab section will help students develop ArcGIS Pro skills. We explore the theory underlying sources of spatial data such as passive and active remote sensing imagery and apply geo-analytical and data exploration methods to integrated problems. Typically Offered: Spring.

GEOG 531 Urban Geography (3 credits)

Joint-listed with GEOG 330

Theory and models of the functions, origin, development, structure, and distribution of cities; land-use and housing, globalization and cities, neighborhood transition, urban economic development, and geographic aspects of city planning. Also considers urban social differences, inequality, and conflicts over the uses and meanings of city space. Graduate students are required to synthesize journal articles and complete an additional independent research paper.

GEOG 535 Climate Change Mitigation (3 credits)

Joint-listed with GEOG 435

Overview of the sources and magnitude of greenhouse gas (GHG) emissions at various scales from international to local; barriers to and options for reducing GHG emissions via new energy sources, increased efficiency, capture of wasted energy and land management practices. For graduate credit, a major independent project is required as well as additional assignments. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall.

GEOG 545 Global Economic Geography (3 credits)

Joint-listed with GEOG 345

An overview of major developments and contemporary debates in the economic geography literature; economic globalization, the spatial dimensions of resource use, agriculture, industry, and post-industry landscapes, economic aspects of land-use change, location theory and case studies. Additional projects required for graduate credit.

GEOG 550 Sustainability of Global Development (3-4 credits)

General Education: International

Joint-listed with GEOG 350

Geographic appraisal of resource problems and development potentials of the Third World. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit. Typically Offered: Fall and Spring. Cooperative: open to WSU degree-seeking students.

GEOG 560 Population Dynamics and Distribution (3-4 credits)

Effects of fertility, mortality, and migration on population size and distribution; demographic trends in U. S. and other societies and how these relate to economic, political, environmental, and other factors. One hour additional meeting per week or project for fourth credit. Additional assignments and exams required for graduate credit. (Spring only)

GEOG 565 Geopolitics and Conflict (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Joint-listed with GEOG 365

Surveys the geographic distribution of political processes, actions, and outcomes at variety of spatial scales - international, national, and local. Topics include origins of the modern territorial state, conflicts over access to and use of space, access to natural resources, nationalism, elections, democratization, globalization, terrorism, and the politics of identity. Graduate students are required to complete an additional independent research paper. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

GEOG 583 Remote Sensing IMAGE ANALYSIS/GIS Integration (3 credits)

Joint-listed with GEOG 483

Concepts and tools for the processing, analysis, and interpretation of digital images from satellite and aircraft-based sensors. The integration of remotely sensed data and the other spatial data types within Geographic Information Systems. Additional assignments and exams required for graduate credit. Two lectures and 2 hours of lab per week. Cooperative: open to WSU degree-seeking students. Typically Offered: Spring.

Coreqs: GEOG 385 or FOR 375 or equivalent

GEOG 591 History and Philosophy of Geography (3 credits)

Evolution of geography as a discipline, focusing on post-scientific revolution developments and identification of major themes in contemporary geographic thought.

GEOG 593 Geovisualization (3 credits)

Covers methods for visualization and analyzing of spatial data. This includes modern data visualization techniques such as incorporation of modeling results, remote sensing and geographic information system layers, and dynamic virtual assets within virtual environments. Typically Offered: Spring and Summer.

GEOG 596 Geography Department Seminar (1 credit)

Weekly or bi-weekly department seminar with talks given by visiting and local speakers on topics relevant to geography.

GEOG 598 (s) Internship (1-16 credits)

Credit arranged. Practical, on-the-job experience with governmental agencies or commercial establishments; oral and written reports are presented in which the student reviews and constructively criticizes the experience gained; salary may be received for services performed.

GEOG 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

GEOG 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Geological Engineering (GEOE)

GEOE 200 (s) Seminar (1-16 credits)

GEOE 398 (s) Internship (1-16 credits)

GEOE 403 (s) Workshop (1-16 credits)

Credit arranged

GEOE 404 (s) Special Topics (1-16 credits)

Credit arranged

GEOE 407 Rock Mechanics (3 credits)

Mechanical properties of rocks and rock masses; lab and insitu techniques to estimate strength, stress distribution, and deformation behavior in rock masses; application of analytical tools such as the finite element method to design stable excavations and support systems in rock. Typically Offered: Varies.

Prereqs: ENGR 350

GEOE 428 Geostatistics (3 credits)

Cross-listed with GEOL 428

Joint-listed with GEOL 534

Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 301. Cooperative: open to WSU degree-seeking students.

GEOE 436 Geological Engineering Analysis and Design (3 credits)

Geological engineering analysis and design methods, including data collection, stability analysis, and ground reinforcement techniques; individual and teamwork approaches to formulation and solving geological engineering problems. One 1-day field trip.

Prereqs: CE 360 or Graduate standing

GEOE 465 Excavation and Materials Handling (3 credits)

Principles of excavation design and handling of earth materials related to construction projects, quarries, and mines; blasting, excavation planning and scheduling, equipment selection and replacement, cost estimating, geographic information and management information systems. Computerized design using Gemcom and/or other appropriate software.

Prereqs: CE 211 or Permission

GEOE 499 (s) Directed Study (1-16 credits)

Credit arranged

GEOE 500 Master's Research and Thesis (1-16 credits)

Credit arranged

GEOE 501 (s) Seminar (1-16 credits)

Credit arranged

GEOE 502 (s) Directed Study (1-16 credits)

Credit arranged

GEOE 503 (s) Workshop (1-16 credits)

Credit arranged

GEOE 504 (s) Special Topics (1-16 credits)

GEOE 517 Tunnel Design and Construction (3 credits)

Geotechnical considerations for tunneling, drilling and blasting, TBM, ground support, haulage, ventilation, water handling, and trenchless technology. Application of analytical techniques such as the finite element method to design stable underground structures and support systems.

Prereqs: GEOE 407 or Permission

GEOE 535 Seepage and Slope Stability (3 credits)

Cross-listed with CE 563

Principles governing the flow of water through soils; mechanics of stability analysis of slopes, landslides, and embankments for soil and rock masses; probabilistic analyses; stabilization methods. Cooperative: open to WSU degree-seeking students. (Alt/even years, Spring only)

Prereqs: CE 360 or GEOE 436; or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

GEOE 598 (s) Internship (1-16 credits)

Credit arranged

GEOE 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Geology (GEOL)

GEOL 101 Physical Geology (3 credits)

General Education: Natural/Integrated Science

The earth, its composition, structure, and natural processes. Three lectures and 2 hours of lab per week; one 1-day field trip.

GEOL 101L Physical Geology Lab (1 credit)

General Education: Natural/Integrated Science

The earth, its composition, structure, and natural processes. Three lectures and 2 hours of lab per week; one 1-day field trip.

GEOL 102 Historical Geology (3 credits)

General Education: Natural/Integrated Science

Gen Ed: Natural and Applied Sciences Evolution of the physical earth, plants, and animals; techniques used in interpretation of geologic history. Includes one 1-day field trip.

Coreqs: GEOL 102L or permission

GEOL 102L Historical Geology Lab (1 credit)

General Education: Natural/Integrated Science

Evolution of the physical earth, plants, and animals; techniques used in interpretation of geologic history.

GEOL 111 Physical Geology for Science Majors (3 credits)

Introductory course in earth science for geology and other science majors. Three lectures and one 2-hour lab per week; two 1-day field trips.

GEOL 111L Physical Geology for Science Majors Lab (1 credit)

Introductory course in earth science for geology and other science majors. Three lectures and one 2-hour lab per week; two 1-day field trips.

GEOL 200 (s) Seminar (1 credit)

Credit arranged

GEOL 203 (s) Workshop (1-16 credits)

Credit arranged

GEOL 204 (s) Special Topics (1-16 credits)

Credit arranged

GEOL 212 Dinosaurs and Prehistoric Life (4 credits)

General Education: Natural/Integrated Science

General Education: Natural and Applied Sciences. Studies of morphology, classification of fossil groups, and utility of fossils in interpreting depositional environments and ages of sedimentary rocks. One 2- to 4-day field trip. Recommended preparation: GEOL 102. Cooperative: open to WSU degree-seeking students.

GEOL 226 Crime Scene Science (3 credits)

Introduction to the use of geological and mineralogical materials and techniques within the criminal/civil justice system. Topics will include the origin and description of minerals, rocks, soils and sands, fossils, industrial materials, and pollen, the history of forensic science, instrumental & forensic laboratory techniques, and the legal aspects of scientific evidence. Two lectures and one 2-hour lab per week; one 1-day field trip. Typically Offered: Fall.

Prereqs: One of the following: GEOL 101/GEOL 101L, GEOL 111/GEOL 111L, CHEM 101/CHEM 101L, CHEM 111/CHEM 111L; or Permission Cooperative: open to WSU degree-seeking students.

GEOL 249 Mineralogy and Optical Mineralogy (4 credits)

Principles of crystallography, crystal chemistry, and crystal structure; mineral identification; principles of optical mineralogy and use of the polarized light microscope. Three lectures and one 2-hour lab per week; two 1-day field trips.

Prereqs: GEOL 111/GEOL 111L or GEOL 101/GEOL 101L, and CHEM 111/CHEM 111L

GEOL 299 (s) Directed Study (1-16 credits)

Credit arranged

GEOL 302 Field Geology Methods (3 credits)

Introduction to field mapping and field techniques; mapping sedimentary sequences and tectonic structures; Professional ethics, report preparation, project budgeting, and safety planning. Accident and health insurance required. Single- and multiple-day field trips with camping required. Typically Offered: Summer.

Prereqs: GEOL 101/GEOL 101L or GEOL 111/GEOL 111L or GEOL 102/GEOL 102L or GEOG 100/GEOG 100L Cooperative: open to WSU degree-seeking students.

GEOL 309 Ground Water Hydrology (3 credits)

Occurrence, movement, and properties of subsurface water; introduction to ground water hydrology.

Prereqs: GEOL 101/GEOL 101L or GEOL 111, and MATH 130 or MATH 143 with a grade of 'C' or better

GEOL 310 Geological Core Logging (1 credit)

Designed to give students an overview of the mining industry and acquaint students with methods used for mineral exploration. Students will receive hands on training in core logging, a fundamental skill for a mining geologist, from mining industry professionals, and will be able to learn about career opportunities for geologists in the mining industry. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

GEOL 318 Economic Geology (3 credits)

Provides an introduction to economic geology through an examination of the lifecycle of a mine—target identification, exploration, mine development, mining methods, ore processing, extraction processes, mine closure, and remediation/restoration, along with discussions regarding the circular economy and green mining. The extraction economy is no longer based on target elements and our ability to remove them from the Earth. Modern mining requires substantial planning at each step of the mine lifecycle from target identification to landscape restoration. Typically Offered: Spring (Even Years).

Prereqs: GEOL 101/GEOL 101L or GEOL 111, and MATH 130 or MATH 143 with a grade of 'C' or better Cooperative: open to WSU degree-seeking students.

GEOL 324 Principles of Stratigraphy and Sedimentation (4 credits)

Interrelationship of sedimentation and stratigraphy and processes and factors influencing genesis of sedimentary rocks. Topics include weathering, fluid flows, sediment mechanics, depositional environments, stratigraphic logging and field data collection, sedimentary lithofacies, provenance, and application of principles of interpretation of stratigraphic record. Two lectures and one 4-hour lab per week; two 1-day field trips; One 5-day field trip.

Prereqs: GEOL 102/GEOL 102L and MATH 143 with a grade of 'C' or better

GEOL 326 Igneous and Metamorphic Petrology (4 credits)

Hard rock petrology plus megascopic and microscopic petrography of igneous and metamorphic rocks. Two lectures and two 2-hour labs per week; two 1-day or one 2-day field trips.

Prereqs: GEOL 249 and MATH 143 with a grade of 'C' or better

GEOL 335 Geomorphology (3 credits)

Classification, recognition, origin, and significance of land forms; land form analysis in interpretation of geologic structure and history. One 2-day field trip.

Prereqs: GEOL 101/GEOL 101L or GEOL 102/GEOL 102L or GEOL 111/GEOL 111L, or GEOG 100/GEOG 100L; and MATH 143 with a grade of 'C' or better; or Permission

GEOL 344 Earthquakes (3 credits)

The geology of earthquakes including the cause of fault rupture, seismic waves, focal mechanisms, and earthquakes associated with all fault types in a variety of tectonic settings; methods of identifying paleo-earthquakes in the geologic record, and the assessment of seismic risk in active fault environments.

Prereqs: GEOL 101 and GEOL 101L or GEOL 111 and GEOL 111L or GEOG 100 or ENVS 101; and MATH 143 with a grade of 'C' or better

GEOL 345 Structural Geology (4 credits)

Investigation of deformed rocks; mechanics of brittle and continuum failure, stress and strain relations, characterization, description, classification of folded and fractured rocks. Three hours of lecture and one 2-hour 45-minute lab per week; one week-long mandatory field trip. (Spring only)

Prereqs: MATH 143 with a grade of 'C' or better; and one semester high-school trigonometry or MATH 144; and GEOL 101/GEOL 101L or GEOL 111/GEOL 111L; and PHYS 111/PHYS 111L or PHYS 211/PHYS 211L.

GEOL 361 Geology and the Environment (3 credits)

This class is constructed to examine the legacy and current generation and disposal of mine waste and how we might best reduce the potential impacts from the mine waste stream. As part of this course, we will explore the production of waste rock (unprocessed mine waste) and tailings (processed mine waste), their potential impact on the environment, and disposal practices for reducing environmental degradation. To assist us in understanding modern mining methods and their ability to reduce environmental impacts from mine waste, we will explore the use of GoldSim, a Monte Carlo simulation software for dynamically modeling complex systems to supports decision-making and risk analysis. GoldSim allows you to create realistic models of mine systems in order to carry out risk analyses, evaluate potential environmental impacts, support strategic planning, and optimize operations.

Prereqs: GEOL 101 and GEOL 101L or GEOL 111 and GEOL 111L or GEOG 100 or ENVS 101; and MATH 143 with a grade of 'C' or better

GEOL 375 Geology of National Parks (3 credits)

Primarily for non-geology majors who want to acquire a better knowledge of geologic concepts and processes through study of geology of national parks. One 6-day field trip.

Prereqs: GEOL 101/GEOL 101L, GEOL 102/GEOL 102L, GEOL 111/GEOL 111L, or GEOG 100/GEOG 100L; and MATH 143 with a grade of 'C' or better

GEOL 398 (s) Internship (1-16 credits)

Credit arranged

GEOL 400 (s) Seminar (1 credit, max arranged)

Participation in departmental colloquium.

Prereqs: MATH 143 with a grade of 'C' or better

GEOL 403 (s) Workshop (1-16 credits)

Credit arranged

GEOL 404 (s) Special Topics (1-16 credits)

Credit arranged

GEOL 405 (s) Professional Development (1-16 credits)

Credit arranged

GEOL 407 Basin Analysis (3 credits)

Joint-listed with GEOL 507

Formation mechanisms and characteristics of sedimentary basins. Modern concepts of tectonics and sedimentary basin analysis, including tectonics of subsidence, detrital mineral provenance, thermal histories, and facies models. Lithofacies distributions and structural styles in a variety of basin types with specific examples from around the world. Additional paper required for graduate credit. One 2-day and one 5-day field trip. Cooperative: open to WSU degree-seeking students. (Spring only)

Prereqs: GEOL 324 and MATH 143 with a grade of C or better

GEOL 410 Groundwater Field Methods (3 credits)

Joint-listed with GEOL 508

Field methods and professional practice in groundwater hydrology. Basic field techniques used in groundwater investigations, including measuring and interpreting depth to water in wells, slug testing, and aquifer pumping tests. Professional skills complementary to field investigations, including logistics, project budgeting, and safety planning. Students are required to participate in a significant amount of work in the field, including performance of a field-based final project. For graduate credit, students must complete a resource evaluation using data gathered in the final project. Cooperative: open to WSU degree-seeking students.

GEOL 422 Principles of Geophysics (4 credits)

Outline of geophysical methods for geological investigations. One 1-day field trip. Course includes 3 hours of lecture and one 2-hour lab per week.

Prereqs: MATH 143 with a grade of 'C' or better

GEOL 423 Principles of Geochemistry (3 credits)

Physiochemical principles applied to geologic processes. Topics covered include atmospheric geochemistry, environmental geochemistry, aqueous geochemistry, crystal chemistry, radiogenic and stable isotopes. These topics provide an overview of the principles of physics and chemistry that define geochemistry and its use to understand Earth's geology. The objective of this course is to learn how geochemical processes control the distribution of elements from the core of the Earth to the atmosphere. Includes one 3-day field trip.

Prereqs: GEOL 249

GEOL 424 Advanced Topics in Sedimentary Rocks (3 credits, max 3)

Joint-listed with GEOL 520

Modern concepts of tectonic sedimentology, depositional environments, facies models, and application of analytical techniques to stratigraphic sequences. GEOL 520 students will have an additional research project. One 5-day field trip. Typically Offered: Spring.

Prereqs: GEOL 324. Cooperative: open to WSU degree-seeking students.

GEOL 428 Geostatistics (3 credits)

Cross-listed with GEOE 428

Joint-listed with GEOL 534

Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 301. Cooperative: open to WSU degree-seeking students.

GEOL 431 Chemical Hydrogeology (3 credits)

Joint-listed with GEOL 531

An exploration of low temperature, aqueous geochemistry principles through examination of atmospheric, geologic, and biologic influences on water chemistry in surface and near-surface hydrologic environments. For graduate credit, students are required to complete an additional independent research paper or presentation. Recommended preparation: GEOL 423.

Prereqs: CHEM 111/CHEM 111L

GEOL 433 Geodynamics (4 credits)

Joint-listed with GEOL 533

This class focuses on the processes and mechanisms that cause motions within and on the surface of the Earth and other planets. Topics to be covered include plate boundary deformation, plate flexure, planetary heat transfer, convection in the mantle and core, melting and melt transport, magma dynamics, and large-scale lithospheric deformation. For graduate credit, students will be expected to complete a research project and report. Course includes 3 hours of lecture and one 3-hour lab per week. Offered fall semester. Recommended Preparation: Math 175 or equivalent. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 143 with a grade of 'C' or better; and MATH 170 or equivalent

GEOL 435 Glaciology and the Dynamic Frozen Earth (3 credits)

Joint-listed with GEOL 535

This course examines the physical processes that govern the frozen components of the Earth system. Idaho's changing snowpack, thinning Arctic sea ice, and accelerating glaciers are all evidence of the Earth's dynamic and rapidly changing frozen surface. These landscapes play critical roles in the climate system. Thinning and retreat of glaciers and ice sheets is on track to raise global sea level by up to a meter within student lifetimes. This course covers the mechanics and energy budgets of the frozen earth. Upon completion of this course, students will be able to describe the ways by which glaciers increase or decrease their flow, the controls on the growth and loss of sea ice, the importance of permafrost environments to the climate and landscape evolution, and how ice preserves a record of past global temperatures. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 160 or MATH 170

GEOL 447 Geochronology and Thermochronology (3 credits)

Joint-listed with GEOL 547

Constraining the timing, rate, and pace of earth processes and events is crucial for geoscience research. This course covers the fundamentals of radiometric dating methods for geologic materials and recent developments in the fields of geochronology and thermochronology. Discussions will focus on principles and assumptions of each technique, novel applications, and interpretation of complex datasets. Additional work required for graduate credit. Typically Offered: Varies.

Prereqs: GEOL 101 or GEOL 111 or Permission Cooperative: open to WSU degree-seeking students.

GEOL 454 Air Quality, Pollution, and Smoke (3 credits)

Cross-listed with FIRE 454

Joint-listed with FIRE 554

Provides details of the controls and drivers of emission processes and impacts on air quality from fires, industry, and natural sources. The course provides an overview of relevant policy and health impacts of various air pollutants on humans. It also includes detail on atmospheric chemistry and physics related to natural and anthropogenic emissions and how these impact atmospheric chemistry and climate. Overview of the combustion and emission process, how these emissions impact air quality, and what models exist to monitor these emissions. Other topics to include: guidelines for smoke management planning, attainment issues, atmospheric transport and deposition processes. Additional work required for graduate credit. Typically Offered: Spring and Summer.

GEOL 462 Petroleum Systems and Stratigraphic Concepts (3 credits)

Joint-listed with GEOL 562

Learn the play elements for a petroleum system and the science behind the discovery, analytical work, extraction, and economics; learn how to use cutting-edge software used in industry to do well log and 3D seismic interpretation using key stratigraphic concepts, and subsurface geologic mapping and interpretation. One 2 to 4 day field trip. Both undergraduate and graduate students will use real geophysical well logs, historic data, and seismic data for their class project. Additional project work is required for graduate credit. Graduate students will be responsible for delving into larger projects and will be expected to exhibit a greater understanding of the implications of their work. Typically Offered: Fall (Even Years).

Prereqs: none Cooperative: open to WSU degree-seeking students.

GEOL 467 Volcanology (3 credits)

Joint-listed with GEOL 567

Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Additional projects/assignments required for graduate credit. Two lectures and one 2-hour lab per week; seven days of field trips.

Prereqs: MATH 143 with a grade of 'C' or better

GEOL 471 Ore Deposits and Exploration (3 credits)

Joint-listed with GEOL 572

The geologic origin of metallic ore deposits and the methods used to search for them. Taught in alternating years. One 1-day and one 3-day field trip. For graduate credit, graduate students must complete a research paper describing some aspect of ore deposit formation. Typically Offered: Varies.

Prereqs: GEOL 249 and MATH 143 with a grade of 'C' or better Cooperative: open to WSU degree-seeking students.

GEOL 474 Stable Isotopes in the Environment (3 credits)

Joint-listed with GEOL 584

Learn the theory and application of stable isotopes to a range of topics in earth sciences, environmental science, and related disciplines. Topics include the kinetic and equilibrium fractionation of stable isotopes in natural systems, the processes that drive those fractionations, and the use of isotope mass spectrometry to measure and understand those processes. Students will work with and interpret real datasets. Additional work is required for graduate credit. Typically Offered: Spring.

Prereqs: GEOL 101 or GEOL 102 or GEOL 111; CHEM 111. Cooperative: open to WSU degree-seeking students.

GEOL 489 Virtual Field Camp (3 credits)

Advanced field problems and methods; interpretation of field data, preparation of reports based on geological observations and interpretations. Virtual Field camp provides the necessary support for students with physical challenges to meet the requirements of the BS degree in geology. Typically Offered: Summer.

Prereqs: GEOL 302, GEOL 345, and MATH 143 with a grade of 'C' or better Cooperative: open to WSU degree-seeking students.

GEOL 490 Geology Field Camp (3 credits)

General Education: Senior Experience

Prereqs: GEOL 345; and MATH 143 with a grade of 'C' or better.

Cooperative: open to WSU degree-seeking students.

GEOL 498 Senior Thesis (3 credits)

Cross-listed with ESS 498

Completion of original research and report. Course is taken over two semesters; first semester is graded IP until completion of second semester. Typically Offered: Varies.

Prereqs: MATH 143 with a grade of 'C' or better and Senior standing and Permission

GEOL 499 (s) Directed Study (1-16 credits)

Credit arranged

Prereqs: MATH 143 with a grade of 'C' or better

GEOL 500 Master's Research and Thesis (1-16 credits)

Credit arranged

GEOL 501 (s) Seminar (1 credit, max arranged)

Participation in departmental colloquium.

GEOL 502 (s) Directed Study (1-16 credits)

Credit arranged

GEOL 503 (s) Workshop (1-16 credits)

Credit arranged

GEOL 504 (s) Special Topics (1-16 credits)

Credit arranged

GEOL 505 (s) Professional Development (1-16 credits)

Credit arranged

GEOL 507 Basin Analysis (3 credits)

Joint-listed with GEOL 407

Formation mechanisms and characteristics of sedimentary basins. Modern concepts of tectonics and sedimentary basin analysis, including tectonics of subsidence, detrital mineral provenance, thermal histories, and facies models. Lithofacies distributions and structural styles in a variety of basin types with specific examples from around the world. Additional paper required for graduate credit. One 2-day and one 5-day field trip. Cooperative: open to WSU degree-seeking students. (Spring only)

Prereqs: GEOL 324 and MATH 143 with a grade of C or better

GEOL 508 Groundwater Field Methods (3 credits)

Joint-listed with GEOL 410

Field methods and professional practice in groundwater hydrology. Basic field techniques used in groundwater investigations, including measuring and interpreting depth to water in wells, slug testing, and aquifer pumping tests. Professional skills complementary to field investigations, including logistics, project budgeting, and safety planning. Students are required to participate in a significant amount of work in the field, including performance of a field-based final project. For graduate credit, students must complete a resource evaluation using data gathered in the final project. Cooperative: open to WSU degree-seeking students.

GEOL 510 (s) Geosystems (3 credits, max 6)

Interdisciplinary core graduate course in earth sciences. Course will involve multiple instructors and modules framed around a common theme. Specific focus may vary from year to year. Cooperative: open to WSU degree-seeking students.

GEOL 520 Advanced Topics in Sedimentary Rocks (3 credits, max 3)

Joint-listed with GEOL 520

Modern concepts of tectonic sedimentology, depositional environments, facies models, and application of analytical techniques to stratigraphic sequences. GEOL 520 students will have an additional research project. One 5-day field trip. Typically Offered: Spring.

Prereqs: GEOL 324. Cooperative: open to WSU degree-seeking students.

GEOL 531 Chemical Hydrogeology (3 credits)

Joint-listed with GEOL 431

An exploration of low temperature, aqueous geochemistry principles through examination of atmospheric, geologic, and biologic influences on water chemistry in surface and near-surface hydrologic environments. For graduate credit, students are required to complete an additional independent research paper or presentation. Recommended preparation: GEOL 423.

Prereqs: CHEM 111/CHEM 111L

GEOL 533 Geodynamics (4 credits)

Joint-listed with GEOL 433

This class focuses on the processes and mechanisms that cause motions within and on the surface of the Earth and other planets. Topics to be covered include plate boundary deformation, plate flexure, planetary heat transfer, convection in the mantle and core, melting and melt transport, magma dynamics, and large-scale lithospheric deformation. For graduate credit students will be expected to complete a research project and report. Course includes 3 hours of lecture and one 3-hour lab per week. Offered fall semester. Recommended Preparation: Math 175 or equivalent. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 143 with a grade of 'C' or better; and MATH 170 or equivalent

GEOL 534 Geostatistics (3 credits)

Joint-listed with GEOL 428 and GEOE 428

Applications of random variables and probability in geologic and engineering studies; regression, regionalized variables, spatial correlation, variograms, kriging, and simulation. Recommended Preparation: STAT 301. Cooperative: open to WSU degree-seeking students.

GEOL 535 Glaciology and the Dynamic Frozen Earth (3 credits)

Joint-listed with GEOL 435

This course examines the physical processes that govern the frozen components of the Earth system. Idaho's changing snowpack, thinning Arctic sea ice, and accelerating glaciers are all evidence of the Earth's dynamic and rapidly changing frozen surface. These landscapes play critical roles in the climate system. Thinning and retreat of glaciers and ice sheets is on track to raise global sea level by up to a meter within student lifetimes. This course covers the mechanics and energy budgets of the frozen earth. Upon completion of this course, students will be able to describe the ways by which glaciers increase or decrease their flow, the controls on the growth and loss of sea ice, the importance of permafrost environments to the climate and landscape evolution, and how ice preserves a record of past global temperatures. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 160 or MATH 170

GEOL 547 Geochronology and Thermochronology (3 credits)

Joint-listed with GEOL 447

Constraining the timing, rate, and pace of earth processes and events is crucial for geoscience research. This course covers the fundamentals of radiometric dating methods for geologic materials and recent developments in the fields of geochronology and thermochronology. Discussions will focus on principles and assumptions of each technique, novel applications, and interpretation of complex datasets. Additional work required for graduate credit. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

GEOL 549 Principles of Electron Microscopy (3 credits)

Theory and principles of scanning and transmission electron microscopy as an investigative tool; includes physical principles of electron microscopy, operation and maintenance of the electron microscope, specimen preparation, and digital image capture. Lab section involves hands-on use of SEM and TEM. Students registering are required to complete a research project. One 1. 5-hour lecture and one 2-hour lab per week. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall.

GEOL 562 Petroleum Systems and Stratigraphic Concepts (3 credits)

Joint-listed with GEOL 462

Learn the play elements for a petroleum system and the science behind the discovery, analytical work, extraction, and economics; learn how to use cutting-edge software used in industry to do well log and 3D seismic interpretation using key stratigraphic concepts, and subsurface geologic mapping and interpretation. One 2 to 4 day field trip. Both undergraduate and graduate students will use real geophysical well logs, historic data, and seismic data for their class project. Additional project work is required for graduate credit. Graduate students will be responsible for delving into larger projects and will be expected to exhibit a greater understanding of the implications of their work. Typically Offered: Fall (Even Years). Cooperative: open to WSU degree-seeking students.

GEOL 567 Volcanology (3 credits)

Joint-listed with GEOL 467

Eruption mechanisms, volcanic processes and landforms, and volcanic deposits. Additional projects/assignments required for graduate credit. Two lectures and one 2-hour lab per week; seven days of field trips. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 143 with a grade of 'C' or better

GEOL 572 Ore Deposits and Exploration (3 credits)

Joint-listed with GEOL 471

The geologic origin of metallic ore deposits and the methods used to search for them. Taught in alternating years. One 1-day and one 3-day field trip. For graduate credit, graduate students must complete a research paper describing some aspect of ore deposit formation. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

GEOL 584 Stable Isotopes in the Environment (3 credits)

Joint-listed with GEOL 474

Learn the theory and application of stable isotopes to a range of topics in earth sciences, environmental science, and related disciplines. Topics include the kinetic and equilibrium fractionation of stable isotopes in natural systems, the processes that drive those fractionations, and the use of isotope mass spectrometry to measure and understand those processes. Students will work with and interpret real datasets. Additional work is required for graduate credit. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

GEOL 597 (s) Practicum (1-16 credits)

Credit arranged

GEOL 598 (s) Internship (1-16 credits)

Credit arranged

GEOL 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

GEOL 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

German (GERM)

Vertically-related courses in this subject field are: GERM 101 - GERM 102 - GERM 201 - GERM 202. Any 300-level GERM course may be considered the terminal course for the related vertical sequence above. A maximum of 16 credits may be earned for vertical credit in any language in the School of Global Studies.

GERM 101 Elementary German I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Pronunciation, vocabulary, reading, spoken German, and functional grammar. Students identified by the instructor as having some degree of German proficiency must take the placement exam. Students with German experience who place higher than GERM 101 on the placement exam may not enroll in GERM 101, but may earn credit for GERM 101 by successfully completing a higher vertically-related course. Typically Offered: every fall.

GERM 102 Elementary German II (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Pronunciation, vocabulary, reading, spoken German, and functional grammar. Typically Offered: Spring.

Prereqs: GERM 101 or placement exam

GERM 107 Beginning German Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the beginning German level. Graded Pass/Fail.

GERM 200 (s) Seminar (1-16 credits)

Credit arranged

GERM 201 Intermediate German I (4 credits)

General Education: International

Review and practice of basic language skills; increased emphasis on reading and free discussion. Typically Offered: Every fall.

Prereqs: GERM 102 or placement exam

GERM 202 Intermediate German II (4 credits)

General Education: International

Review and practice of basic language skills; increased emphasis on reading and free discussion. Typically Offered: Spring.

Prereqs: GERM 201 or placement exam

GERM 204 (s) Special Topics (1-16 credits)**GERM 298 (s) Internship (1-16 credits)****GERM 299 (s) Directed Study (1-16 credits)**

Credit arranged

GERM 301 German Reading and Writing (3 credits)

General Education: International

Emphasis on developing writing and reading; exploration of cultural topics. (Fall, alt/years) Typically Offered: Every other fall.

Prereqs: GERM 202 or placement exam

GERM 302 German Listening and Speaking (3 credits)

General Education: International

Emphasis on listening and speaking skills; discussion on topics of cultural interest. Typically Offered: Fall (Even Years).

Prereqs: GERM 202 or placement exam

GERM 304 German Culture and Society (3 credits)

German society, political culture, and the arts.

Prereqs: GERM 202 or placement exam

GERM 307 German Film (3 credits)

Study of representative German films to gain an understanding of cinematic traditions and the portrayal of cultural, political, and social issues.

Prereqs: GERM 202 or placement exam

GERM 398 (s) Internship (1-16 credits)**GERM 400 (s) Seminar (1-16 credits)**

Credit arranged

GERM 402 Advanced Speaking and Writing (3 credits)

Development of advanced proficiency in speaking and writing.

Prereqs: Two 300-level German courses, placement exam, or instructor permission.

GERM 404 (s) Special Topics (1-16 credits)

Credit arranged

GERM 410 German for the Professions (3 credits)

Language and intercultural skills necessary for effective oral and written communication in professional settings in German-speaking countries.

Prereqs: Two 300-level German courses, placement exam, or instructor permission.

GERM 420 Topics in German Culture & Literature - Themes (3 credits, max 6)

General Education: International

For advanced students; important themes in German cultural/literary studies. (Spring, alt/years)

Prereqs: GERM 301 or GERM 302 Cooperative: open to WSU degree-seeking students.

GERM 440 German Media (3 credits)

General Education: International

Reading and discussion from contemporary German-language media; focus on topics of current cultural, political, and/or social interest.

Typically Offered: Varies.

Prereqs: Two 300-level German courses, placement exam, or instructor permission

GERM 499 (s) Directed Study (1-16 credits)

Credit arranged

Health and Safety (H&S)

H&S 150 Wellness Lifestyles (3 credits)

Health concepts and strategies that affect one's wellness; emphasis on personal responsibility and life-style choices.

H&S 200 (s) Seminar (1-16 credits)

Credit arranged

H&S 203 (s) Workshop (1-16 credits)

Credit arranged

H&S 204 (s) Special Topics (1-16 credits)

Credit arranged

H&S 232 Medical Terminology (2 credits)

Introduction to basic concepts of medical terminology and symbols related to medical and allied health professionals.

H&S 245 Introduction to Athletic Injuries (3 credits)

Online. Basic prevention, recognition, and immediate care of athletic injuries with application of course material through lab activities.

H&S 299 (s) Directed Study (1-16 credits)

Credit arranged

H&S 301 Peer Health Education (2 credits)

This course prepares students to inform, educate, intervene and assist their campus peers to make healthy lifestyle choices. Upon completion of the course and Certified Peer Health Educator (CPE) test, students become a CPE with the Bacchus Network. Students meet once a week for 2 hours in class.

H&S 328 Community Health: Theory, Systems, and Practice (3 credits)

This course examines concepts of community and public health history, philosophy, theory, science, and practice. Community health is presented as an interdisciplinary and interactive system organized to promote and protect health, prevent disease, and eliminate health disparities. It also addresses professional competencies, standards, and the important role of community health in the health care system. Typically Offered: Fall.

H&S 350 Stress Management and Mental Health (2 credits)

Application of behavioral stress management techniques that have the potential to relieve mental and physical stress; emphasis on development of skills related to mental and physical health.

H&S 400 (s) Seminar (1-16 credits)

Credit arranged

H&S 403 (s) Workshop (1-16 credits)

Credit arranged

H&S 404 (s) Special Topics (1-16 credits)

Credit arranged

H&S 423 Health Education Methods (3 credits)

Joint-listed with H&S 523

Curriculum design, planning and instruction, methods and strategies, and resource materials for teaching health in school and community settings. Additional work required for graduate credit.

Prereqs: H&S 150 or MVSC 201, EDCI 201, and acceptance into teacher preparation

H&S 450 Critical Health Issues (3 credits)

Provides a sampling of information that represents the current and projected trends in health; students will gain an understanding of broad public health issues and what strategies would be useful to address these problems.

Prereqs: BIOL 227 and BIOL 228; or MVSC 201

H&S 451 Psychosocial Determinants of Health (3 credits)

Investigates the social, emotional, intellectual, social, and spiritual factors influencing health behaviors. Emphasis is placed on understanding and evaluating the biopsychosocial model and the interrelation between one's physical, psychological, and social well being.

Prereqs: MVSC 201

H&S 490 Health Promotion (3 credits)

Examines the philosophical, ethical and theoretical foundations of the professional practice of health promotion in school, community, and work site settings, as well as in health promotion consultant activities. Emphasis will be placed on facilitating prepared units/lessons to respective target populations such as students, employees, patients, or community members. (Spring only)

Prereqs: H&S 450 or Permission

H&S 498 (s) Internship (1-9 credits)

Supervised field work.

Prereqs: Senior standing

H&S 499 (s) Directed Study (1-16 credits)

Credit arranged

H&S 501 (s) Seminar (1-16 credits)

Credit arranged

H&S 502 (s) Directed Studies (1-16 credits)

Credit arranged

H&S 503 (s) Workshop (1-16 credits)

Credit arranged

H&S 504 (s) Special Topics (1-16 credits)

Credit arranged

H&S 505 (s) Professional Development (1-16 credits)

Credit arranged. Credit earned in this course will not be accepted toward graduate degree programs.

H&S 523 School Health Education Methods and Administration (3 credits)

Joint-listed with H&S 423

Curriculum design, organization and administration, methods and strategies, and resource materials for teaching health in school health settings. Team leadership project and activity required for graduate credit. (Fall only)

Prereqs: H&S 150 or MVSC 201

H&S 597 (s) Practicum (1-3 credits, max 3)**H&S 599 (s) Research (1-16 credits)**

Credit arranged

History (HIST)

HIST 100 What is the Study of the Past (1 credit)

This course introduces students to the basic study of the human past. Students will gain a broad overview of the historical discipline and learn about the diverse methods and means of studying peoples and cultures of the past. Note: this class is open for all interested students, not simply history majors.

HIST 101 World History I (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Contributions to the modern world, to 1650. Typically Offered: Varies.

HIST 102 World History II (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Contributions to the modern world, 1650 to present. Typically Offered: Every semester.

HIST 111 United States History I (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing
Political, diplomatic, economic, social, and cultural history; earliest times to 1877. Typically Offered: Fall.

HIST 112 United States History II (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing
Political, diplomatic, economic, social, and cultural history; 1877 to present. Typically Offered: Spring.

HIST 180 Introduction to East Asian History (3 credits)

General Education: Social and Behavioral Ways of Knowing
Survey of traditional and modern Chinese and Japanese history. Typically Offered: Fall and Fall (Odd Years).

HIST 200 (s) Seminar (1-16 credits)

Credit arranged

HIST 204 (s) Special Topics (1-16 credits)

Credit arranged

HIST 211 Food through the Ages (3 credits)

The comparative survey and analysis of how the choice, preparation and eating of food not only shaped and formed cultures but also defined civilizations, from hunting and gathering to the present.

HIST 212 Sex and Gender through the Ages (3 credits)

Comparative analysis of sex and gender in global historical setting. Focus upon changing sexual/gender behavior both inside and outside of marriage; shifts in sexual mentalities and moral values; and the efforts to regulate, repress, or encourage forms of sexual behavior and attitudes.

HIST 213 Race and Ethnicity through the Ages (3 credits)

Comparative survey of race and ethnicity across region, culture, and time; factors that create social cohesion and/or conflict; political, sociocultural, and economic dimensions of racial and ethnic relations; the making of identity and cultural mentalities in international/global settings.

HIST 214 Warfare through the Ages (3 credits)

Comparative survey of war and military history from ancient times to present; emphasis on interrelationship of war, society, and technology; impact of war and violence upon human culture, environment, and everyday life.

HIST 270 Introduction to Greek and Roman Civilization (3 credits)

General Education: Humanistic and Artistic Ways of Knowing,
International

Ancient Greece and Rome have long been the subject of fascination and admiration. From classical Athenian democracy to the Roman army to the intellectual and dramatic creativity of these societies, Greece and Rome, for better or for worse, form an essential backdrop for understanding western civilizations. This is a survey course that examines the histories of ancient Greece and Rome through five thematic units. Each course theme forms one module. The course modules (i. e. thematic units) are intended to introduce you to key events, people, and themes that define not only the history of Greek and Roman civilizations, but also major scholarly approaches to the study of ancient history. The modules may include Greek and Roman society, gender and sexuality, ancient religions, political structures and beliefs, and military history.

HIST 271 Gods, Heroes, and Monsters: Myth in the Ancient World (3 credits)

Cross-listed with FLEN 271

From Marvel to Hollywood to fantasy to literature, ancient myth weaves its way through modern life. But what were these myths like in their original form? What role did they play in the ancient world? How can we use them to understand ancient cultures? What lessons and themes can we still apply today? This class is intended to introduce students broadly to ancient mythology. We will dive into all the messy weirdness of ancient mythology, from heroic quests to resurrection stories, to gods behaving very badly. We will explore themes such as human-divine relationships, gods getting angry and punishing people, origin stories, sexuality and myth, and quests and adventure stories through five mytho-cultural groups: the Mesopotamians, Egyptians, Greeks, Romans, and Celts. You will then complete group research projects and presentations focused on a different mytho-cultural group: Norse/Germanic, Persian, culture of choice within African or African Diaspora groups, Chinese, Japanese, Indian (Hindu), culture of choice within the Indigenous Americas, Polynesian (Hawaiian, Samoan, Māori, Tongan), and Indigenous Australian. Typically Offered: Fall.

HIST 290 The Historian's Craft (3 credits)

Introduction to the discipline of history, basic skills for course work and research, and major schools of historical writing.

HIST 300 Digital History (3 credits)

This course introduces the theory and practice of digital history. Students will use digital technologies to help research and present history and related interdisciplinary subjects. Note: no prior special computing skills are required.

HIST 310 The Civil War and Reconstruction (3 credits)

This course examines the causes of the Civil War in the United States, the conflict itself, and its consequences from 1830 to 1877. Topics will include the histories of slavery, abolition and race; the meanings of freedom; the nature of "total war"; and the promises and failures of Reconstruction.

HIST 315 Comparative African-American Cultures (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
An overview of African American history in the U. S. from the late 19th century to the present; comparisons with the experience of African Americans in other parts of the Americas; study of important personalities and historical forces that have influenced African Americans and the societies in which they live. Typically Offered: Varies.

HIST 316 American Indian History (3 credits)

General Education: American Diversity

Cross-listed with AIST 316

Course investigates Indigenous people in North America from time immemorial to present. Emphasizes Native American resilience and adaptability in the face of colonialism.

HIST 318 Colonial America: A Collision of Peoples (3 credits)

Surveys North American history from the era preceding contact through the American Revolution. Emphasizes encounters and conflicts between Europeans and Native Americans, major political and economic developments, cultural and intellectual transformations, and the formation of American societies.

HIST 319 19th-century America: Expanding America (3 credits)

Surveys American history in the nineteenth century. Emphasizes contests over national expansion and inclusion, war and reconstruction, and cultural reform and invention.

HIST 320 20th-century America: The Colossus (3 credits)

Surveys American history in the twentieth century. Emphasizes growth of the United States as a world military and economic power, rising nationalism, battles for civil rights and reforms, and rise and consequences of popular culture.

HIST 325 The Long 1960s (3 credits)

Focusing on the era between 1955 and 1975, often called the "long 1960s," this course examines the cultural, political, and social changes of these decades, particularly in the United States.

HIST 331 The Age of African Empires (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Survey of the history of Africa south of the Sahara to 1800.

HIST 342 Alexander the Great and the Hellenistic World (3 credits)

Surveys the conquests of Alexander the Great and the political, cultural, and social history of the Hellenistic World from c. 359 BCE to c. 31 BCE.

HIST 344 The Roman Empire (3 credits)

Cross-listed with RELS 344

Surveys Roman history from c. 31 BCE to the 5th century CE, paying particular attention to military, political, religious, and social issues and developments.

HIST 350 The Age of Enlightenment: European Culture & Ideas, 1680-1800 (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

History of thought, material culture, and mentalities in Enlightenment society; focus upon intersection between science and enlightenment values; new ideas about individualism, democracy, race, and gender. Typically Offered: Varies.

HIST 357 Women in Pre-Modern European History (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Survey of historical experience of women from the Greeks through the 17th century.

HIST 366 Modern European Cultural and Intellectual History, 1880-1980 (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Evolution of major cultural attitudes and values in modern European society; relation between modernity and cultural modernism; the impact of war and revolution; key ideas and intellectual movements associated with Nietzsche, Freudianism, the avant-garde, existentialism, structuralism, and postmodernism. Typically Offered: Varies.

HIST 371 History of England (3 credits)

General Education: International

Political, social, economic, and religious development of the British Isles, to 1688.

HIST 372 History of England (3 credits)

General Education: International

Political, social, economic, and religious development of the British Isles.

HIST 379 History of Science II: 1700-Present (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Examines the changing nature of scientific thought, institutions, and technological advance from 1700 to the present. Emphasis upon the rapid acceleration of scientific knowledge and practice in the global setting – particularly the physical sciences – as well as the strong interconnections between states, institutions, and broader sociocultural factors in the making of scientific knowledge.

HIST 380 Disease and Culture: History of Western Medicine (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Survey of Western medicine from Antiquity to the present. Examination of changing theories of disease, the scientific study of the human body, evolution of medical practices and treatment, the institutionalization of medical practice, and the evolution of public health policy. (Alt/years)

Prereqs: Junior standing or Permission

HIST 401 (s) Seminar (1-9 credits, max 9)

Joint-listed with HIST 501

Graduate Seminars offer students the opportunity to conduct independent research on topics within the fields of U. S. , Latin American, ancient, English, and European history. Additional work required for graduate credit. Typically Offered: Fall.

Prereqs: Department Permission

HIST 403 (s) Workshop (1-16 credits)

Credit arranged

HIST 404 (s) Special Topics (1-16 credits)

Credit arranged

HIST 405 (s) Professional Development (1-16 credits)

Joint-listed with HIST 505

Credit arranged

HIST 414 (s) History and Film (3 credits, max 6)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

The course focuses on the history of the Americas since 1900. Through readings, discussion and film, historical events and individuals are analyzed. Emphasis is placed on themes related to culture, race, gender, and historical memory. Typically Offered: Varies.

HIST 420 History of Women in American Society (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

Examination of the roles of women (social, economic, and political) in U. S. history from colonial times to the present. Typically Offered: Varies.

HIST 424 American Environmental History (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

Joint-listed with HIST 524

History of changing American attitudes and actions toward the environment over three centuries. Typically Offered: Fall.

HIST 430 U.S. Diplomatic History (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 Joint-listed with HIST 530
 World power through war and the quest for peace, 1898 to present.

HIST 438 Modern Mexico and the Americas (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 Cross-listed with LAS 438
 Joint-listed with HIST 538
 Survey and analysis of political, economic, social, and cultural aspects from independence to present; emphasis on Iberian and Amerindian legacies, economic development, relations with U. S. , and social revolution of 1910-1920. Additional work required for graduate level credit. Typically Offered: Varies.

HIST 439 Modern Latin America (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 Cross-listed with LAS 439
 Gen Ed: Social Science, International Political, economic, social, and cultural development; search for stability; growth of nationalism.

HIST 440 Social Revolution in Latin America (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 Joint-listed with HIST 540
 Analysis and comparison of 20th-century social revolution in selected Latin American countries: Cuba and two others; emphasis on origins of movements for social change, economic development issues, impact of the revolutions, and relations between new governments and the U. S. Additional work required for graduate level credit. Typically Offered: Varies.

HIST 441 Slavery and Freedom in the Americas (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 Cross-listed with LAS 441
 Gen Ed: Social Science, International Analysis of the way in which African slavery became the predominant labor force in the Americas from 16th century to 19th century. Emphasis on slave resistance and the international abolitionist movement (1760s to 1888).

HIST 442 The Medieval Church: Europe in the Early and High Middle Ages (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
 Cross-listed with RELS 442
 Joint-listed with HIST 542
 Evolution of medieval Christian society from reign of Constantine (c. 300) to pontificate of Innocent III (1215), as expressed in monastic and mendicant orders, crusades, 12th-century Renaissance, and heresy. Typically Offered: Varies.

HIST 443 The Medieval State: Europe in the High and Late Middle Ages (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
 Cross-listed with RELS 443
 Joint-listed with HIST 543
 Analysis of how the vitality of particular medieval princes, of the commercial revolution, and of such movements as development of common law was harnessed in the evolution of medieval government from feudalism to the modern state.

HIST 444 Ancient Greece: From Bronze Age to Alexander (3 credits)

Cross-listed with RELS 441
 Joint-listed with HIST 554
 Survey of development of Greek civilization, BC 2000-BC 300. Additional projects/assignments required for graduate credit. Typically Offered: Varies.
Prereqs: None
Coreqs: None Prereqs or Coreqs: None

HIST 445 Medieval English Constitutional and Legal History: 1066-1485 (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
 Joint-listed with HIST 545
 The study of the origins and development of English law and the English constitution during the Middle Ages. Additional projects/assignments required for graduate credit. Typically Offered: Fall (Even Years).

HIST 446 Ancient Rome: The Republic (3 credits)

Cross-listed with RELS 444
 Joint-listed with HIST 546
 Survey of development of Roman civilization, 800-27 BCE. Additional projects/assignments required for graduate credit. Typically Offered: Varies.
Prereqs: None
Coreqs: None Prereqs or Coreqs: None

HIST 447 The Renaissance (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
 Cross-listed with RELS 447
 Explores the transformative movement known as the European Renaissance. Examines how humanism not only shaped and formed art, music, literature and philosophy but also informed one's relationship to the state. Typically Offered: Varies.

HIST 448 The Reformation (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
 Cross-listed with RELS 448
 This course examines the social and economic as well as the theological dynamic of the Reformation. The course begins by examining the thought of Erasmus and More, continuing through that of Luther, Calvin, and Loyola, to the Anabaptists. Religious upheaval lead not only to the political and military upheaval of the Religious Wars, but also to religious debate, the echoes of which resound through to the present. Additional projects/assignments required for graduate credit.

HIST 450 (s) (s) Topics in Ancient History (3 credits, max 9)

Cross-listed with RELS 450
 Joint-listed with HIST 550
 Examines varied thematic and geographical/chronological topics in ancient history. This course varies in its topical focus each semester. Topics may include but are not limited to: Egypt and the Ancient Near East; religions in the ancient world; the ancient world in modern film or literature; imperialism and colonialism; gender and sexuality; race and ethnicity; trade, commerce, and coins. Typically Offered: Varies.

HIST 452 Europe in the Age of the Revolution, 1770-1880 (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
 The social, political, and cultural dimensions of revolutions of 1789, 1830, 1848, and 1870; impact of industrial revolution upon daily life; process of European nation-building; new ideologies of liberalism, socialism, conservatism, and romanticism.

HIST 453 Studying History in an International Setting (3-6 credits, max 6)

Introduction to studying history in an international setting and history as expeditionary learning. Course covers on-site historical experience, including: museums, archives, libraries, historical monuments, daily life and culture, material culture, language, and cultural awareness and sensibility. Travel is a required part of course experience.

HIST 454 Pictures and Power: Photography, Politics, and American History (3 credits)

General Education: Social and Behavioral Ways of Knowing
Explores how photography has shaped struggles over social justice in the United States since the nineteenth century. Examines a range of moments – from the crisis over antebellum slavery to class conflict in the late nineteenth century, from debates over poverty in the Great Depression to social movements of the 1960s to current human rights issues. In various periods, it considers subjects including the use of photography within social movements, the ethics of photojournalistic representation, the powers and limitations of news images, the use of photographs for surveillance and propaganda, the relation between photography and identity, and the role of spectatorship.

HIST 456 Anti-Semitism and the Holocaust (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
The roots and character of European anti-Semitism from the Roman Empire to the Nazis and beyond; special focus on the Third Reich and World War II. Typically Offered: Varies.

HIST 457 History of the Middle East (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Survey of the Middle East from the beginning of the Islamic period to the present. Typically Offered: Varies.

HIST 460 Conspiracies and Secret Societies in History (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
The notion that human affairs are shaped by conspiratorial and occult forces bent on the achievement of secret agendas has attained wide currency. The idea that the world is governed by powerful, unseen forces has a long history that this course will explore. Additional work required for graduate credit. Recommended Preparation: HIST 101 and HIST 102. (Alt/years)

HIST 461 Idaho and the Pacific Northwest (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing
Political, economic, social development; earliest times to the present. Typically Offered: Varies.

HIST 462 History of the American West (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing
Survey of major developments in the American West, from the Great Plains to the Pacific Ocean and beyond, including racial and ethnic diversity, environment, gender, politics, and economics.

HIST 463 Fashion and Identity in American Culture (3 credits)

This course examines the cultural, political, and social meanings embedded in personal style in American culture during the 19th and 20th centuries.

HIST 464 Gender and Race in the American West (3 credits)

This course examines the role of gender and race in the development of the diverse geographical borderlands of the US West over the 18th, 19th, and 20th centuries. In addition to looking at the social history of the region, students will also examine the West as a cultural construction that has been gendered and racialized through the development of popular culture.

HIST 466 Eastern Europe Since 1774 (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Nationality, nation-building, and dissolution; emphasis on Poland, the Habsburg Empire, and the Balkans. Typically Offered: Varies.

HIST 467 Russia to 1894 (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Joint-listed with HIST 567
Russia from medieval origins to 1894; development of Tsarist autocracy and serfdom; reaction, reform, and rise of the revolutionary movements.

HIST 468 Russia and Soviet Union Since 1894 (3 credits)

Joint-listed with HIST 568
The last years of Tsarism; revolutions of 1905 and 1917; development of the Soviet Union under Lenin, Stalin, and their successors. Additional work required for graduate credit. Typically Offered: Fall and Spring.

HIST 482 Japan, 1600 to Present (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Joint-listed with HIST 582
Western impact on the political, cultural, and economic fabric of Japanese society.

HIST 484 Modern China, 1840s to Present (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Last century of Qing dynasty, 1911 Revolution and Republican experiment, Revolution of 1949, and People's Republic of China. Typically Offered: Fall.

HIST 485 Chinese Social and Cultural History (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International
Joint-listed with HIST 585
Survey of Chinese culture and traditions during the first millennium. Additional assignment/projects required for graduate credit.

HIST 495 History Senior Seminar (3 credits)

General Education: Senior Experience
Directed research in primary and secondary sources, culminating in substantial research paper. Course themes and instructor will vary semester to semester.
Prereqs: HIST 290 or equivalent

HIST 497 (s) Practicum (1-16 credits, max 6)**HIST 498 (s) Internship (1-16 credits)**

Credit arranged

HIST 499 (s) Directed Study (1-16 credits)

Credit arranged

HIST 500 Master's Research and Thesis (1-16 credits)

Credit arranged

HIST 501 (s) Seminar (1-9 credits, max 9)

Joint-listed with HIST 401
Graduate Seminars offer students the opportunity to conduct independent research on topics within the fields of U. S. , Latin American, ancient, English, and European history. Additional work required for graduate credit. Typically Offered: Fall.

HIST 502 (s) Directed Study (1-16 credits)

Credit arranged

HIST 503 (s) Workshop (1-16 credits)

Credit arranged

HIST 504 (s) Special Topics (1-16 credits)

Credit arranged

HIST 505 (s) Professional Development (1-16 credits)

Joint-listed with HIST 505
Credit arranged

HIST 514 (s) Colloquium in American History (3 credits, max 9)

This is a reading seminar focused on building graduate students' awareness and mastery of relevant historiographies on a chosen topic in American history. The course emphasizes changing approaches to historical problems, different schools of historical thought, methodological and theoretical issues, and other relevant topics. The course theme and relevant historiographies will vary with instructor. Typically Offered: Spring.

Prereqs: Graduate Standing or Instructor Permission

HIST 522 (s) Colloquium in European History (3 credits, max 9)

This is a reading seminar focused on building graduate students' awareness of and conversance in relevant historiographies on a chosen topic in European history. The course emphasizes changing approaches to historical problems, different schools of historical thought, methodological issues, and other relevant topics. The course theme and relevant historiographies will vary with instructor. Typically Offered: Spring.

Prereqs: Graduate Standing or Instructor Permission

HIST 524 American Environmental History (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

Joint-listed with HIST 424

History of changing American attitudes and actions toward the environment over three centuries. Typically Offered: Fall.

HIST 530 U.S. Diplomatic History (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Joint-listed with HIST 430

World power through war and the quest for peace, 1898 to present.

HIST 538 Modern Mexico and the Americas (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Joint-listed with HIST 438, LAS 438

Survey and analysis of political, economic, social, and cultural aspects from independence to present; emphasis on Iberian and Amerindian legacies, economic development, relations with U. S. , and social revolution of 1910-1920. Additional work required for graduate level credit. Typically Offered: Varies.

HIST 540 Social Revolution in Latin America (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Joint-listed with HIST 440

Analysis and comparison of 20th-century social revolution in selected Latin American countries: Cuba and two others; emphasis on origins of movements for social change, economic development issues, impact of the revolutions, and relations between new governments and the U. S. Additional work required for graduate level credit. Typically Offered: Varies.

HIST 542 The Medieval Church: Europe in the Early and High Middle Ages (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Joint-listed with HIST 442, RELS 442

Evolution of medieval Christian society from reign of Constantine (c. 300) to pontificate of Innocent III (1215), as expressed in monastic and mendicant orders, crusades, 12th-century Renaissance, and heresy. Typically Offered: Varies.

HIST 543 The Medieval State: Europe in the High and Late Middle Ages (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Joint-listed with HIST 443, RELS 443

Analysis of how the vitality of particular medieval princes, of the commercial revolution, and of such movements as development of common law was harnessed in the evolution of medieval government from feudalism to the modern state.

HIST 544 (s) Colloquium in Global History (3 credits, max 9)

This is a reading seminar focused on building graduate students' awareness and mastery of relevant historiographies on a chosen topic in global history. The course emphasizes changing approaches to historical problems, different schools of historical thought, methodological issues, and other relevant topics. Typically Offered: Spring.

Prereqs: Graduate standing or departmental permission

HIST 545 Medieval English Constitutional and Legal History: 1066-1485 (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Joint-listed with HIST 445

The study of the origins and development of English law and the English constitution during the Middle Ages. Additional projects/assignments required for graduate credit. Typically Offered: Fall (Even Years).

HIST 546 Ancient Rome: The Republic (3 credits)

Joint-listed with HIST 446, RELS 444

Survey of development of Roman civilization, 800-27 BCE. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

HIST 550 (s) Topics in Ancient History (3 credits, max 9)

Joint-listed with HIST 450, RELS 450

Examines varied thematic and geographical/chronological topics in ancient history. This course varies in its topical focus each semester. Topics may include but are not limited to: Egypt and the Ancient Near East; religions in the ancient world; the ancient world in modern film or literature; imperialism and colonialism; gender and sexuality; race and ethnicity; trade, commerce, and coins. Typically Offered: Varies.

HIST 554 Ancient Greece: From Bronze Age to Alexander (3 credits)

Joint-listed with HIST 444, RELS 441

Survey of development of Greek civilization, BC 2000-BC 300. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

Coreqs: None Prereqs or Coreqs: None

HIST 568 Russia and Soviet Union Since 1894 (3 credits)

Joint-listed with HIST 468

The last years of Tsarism; revolutions of 1905 and 1917; development of the Soviet Union under Lenin, Stalin, and their successors. Additional work required for graduate credit. Typically Offered: Fall and Spring.

HIST 582 Japan, 1600 to Present (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Joint-listed with HIST 482

Western impact on the political, cultural, and economic fabric of Japanese society.

HIST 585 Chinese Social and Cultural History (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Joint-listed with HIST 485

Survey of Chinese culture and traditions during the first millennium. Additional assignment/projects required for graduate credit.

HIST 590 Issues and Methods in History (3 credits)

This course introduces graduate students to key methodological, theoretical, and disciplinary standards of history; and the significance of comparative and interdisciplinary approaches to understanding historical developments.

HIST 598 (s) Internship (1-16 credits)

Credit arranged

HIST 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

HIST 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

HIST 602 (s) Directed Study (1-16 credits)

Credit Arranged

Human Development and Family Studies (HDFS)

HDFS 105 Individual and Family Development (3 credits)

Basic principles and sequences in individual and family development; family structure and functions as they support human development.

Typically Offered: Fall.

HDFS 146 Adulting: Life, Love & Money (3 credits)

This introductory course offers a practical approach to learning necessary life skills such as money management, navigating personal relationships, and planning for the unexpected things in life. Using an interdisciplinary approach, this course explores how emotions affect the use of money, and how that affects relationships throughout the lifespan. Students will learn smart decision making skills to help them succeed in college and post-college. Typically Offered: Fall.

HDFS 220 Introduction to Human and Community Engagement (1 credit)

Cross-listed with CLDR 220

This course aims to prepare students to discover initiatives and opportunities for personal and professional engagement in their communities. Students will identify individual and community-based issues through an overview of basic human and community development theories and models. Students will examine the volunteerism, efforts, programs, policies, and practices of governmental agencies, charitable foundations, non-governmental organizations, and other community-based initiatives in the local area. Students will recognize their role as a citizen and opportunities for harnessing their talents through human and community engagement. Typically Offered: Spring.

HDFS 240 Intimate Relationships (3 credits)

Dynamics of intimate relationships from early adulthood through the adult lifespan. Typically Offered: Spring.

HDFS 334 Adolescence and Emerging Adulthood (3 credits)

Physical, cognitive, and socioemotional development of adolescents and emerging adults in the context of family, relationships, and culture. Typically Offered: Fall.

Prereqs: HDFS 105, PSYC 101, or SOC 101; or Permission

HDFS 360 Sexuality Across the Lifespan (3 credits)

Sexuality lies at the core of our identities as human beings. This course explores critical perspectives on the development of sexuality across the lifespan, from childhood and adolescence to adulthood and later life, within the contexts of intimate relationships, family systems, and society. Participants are introduced to theory and research that prepare them to engage in sophisticated and thoughtful analyses of the complexity of identity and diverse sexualities, sexual behavior and feelings, cultural traditions and moral beliefs related to sex and identity, and academic approaches to the study of sex and sexual development. Typically Offered: Fall.

Prereqs: HDFS 105 and HDFS 240

HDFS 401 Professional Ethics and Practice in CFCS (1 credit)

Establishing a professional identity and transitioning to a career in human development and family services. Emphasis on professional presentation and ethical conduct. Explores ethical and philosophical issues; professional development and leadership; and career goals, opportunities, and challenges as they relate to human development and family sciences. Typically Offered: Spring.

HDFS 404 (s) Special Topics (1-16 credits, max arranged)**HDFS 410 Growing Old in a New Age (3 credits)**

Overview of issues related to aging; life-span development, how environments affect older persons, seeking an optimal quality of life, cross-cultural considerations, how aging is studied, and how to access resources. Graded Pass/Fail. Typically Offered: Spring.

HDFS 420 Advanced Human and Community Engagement Experience (2-5 credits)

Cross-listed with CLDR 420

Formalized service-learning experience with community-based organization(s). Students commit a minimum of 40 hours of volunteerism/community engagement per semester credit. At least 40 hours must be with the preapproved organization and supervisor. Requires completion of a formal proposal. Typically Offered: Fall, Spring and Summer.

Prereqs: CLDR 220 or HDFS 220, and enrollment in final semester of Human and Community Engagement Minor

HDFS 431 Certified Family Life Educator Methodology (3 credits)

This course surveys the models and methods for strengthening family relationships utilizing primary prevention strategies. Students will learn diverse techniques for teaching content related to the three cornerstones of family life education: interpersonal relationships, sexuality, and parenting. Typically Offered: Spring.

Prereqs: HDFS 240, ECDE 340, or HDFS 440

HDFS 434 Adulthood and Aging within the Context of Family (3 credits)

Analysis of development from young adulthood to old age. Includes factors that influence changes as well as continuity in physical, emotional, social, cognitive, and creative development. Overview of theories of human development and current issues in aging, including dementia, family and lifestyle choices, relationships, retirement, and grandparenting. Requirements for graduate credit include conducting a review of literature in a chosen topic and presenting it to the class. Typically Offered: Spring.

Prereqs: HDFS 105, Junior standing

HDFS 440 Contemporary Family Relationships (3 credits)

Dynamics of the major types of family relationships; marital, parent-child, sibling, and extended-family interaction in contemporary society. Typically Offered: Spring.

Prereqs: PSYC 101, SOC 101, or Permission

HDFS 445 Issues in Work and Family Life (3 credits)

Joint-listed with HDFS 545

Study of theories, trends, policies, and issues related to work and family; examination of assessment instruments; development of proposals.

Additional projects/assignments required for graduate credit. Typically Offered: Fall.

Prereqs: HDFS 105 and FCS 346; and Family and Consumer Sciences major

HDFS 498 (s) Internship (1-16 credits)**HDFS 499 (s) Directed Study (1-16 credits, max arranged)****HDFS 545 Issues in Work and Family Life (3 credits)**

Joint-listed with HDFS 445

Study of theories, trends, policies, and issues related to work and family; examination of assessment instruments; development of proposals.

Additional projects/assignments required for graduate credit. Typically Offered: Fall.

Hydrology (HYDR)

HYDR 404 (s) Special Topics (1-16 credits)

Credit arranged

HYDR 409 Quantitative Hydrogeology (3 credits)

Joint-listed with HYDR 509

A rigorous introduction to the description of flow in porous media; the basic equations of potential flow theory as they relate to ground water problems, with application to common engineering problems encountered by hydrogeologists and engineers; dimensional analysis, properties assignment, and heterogeneous systems. Additional reading, presentations, and/or written reports of assigned literature required for graduate credit. Typically Offered: Varies.

Prereqs: 'C' or higher in either MATH 160 or MATH 170

HYDR 412 Environmental Hydrogeology (3 credits)

Joint-listed with HYDR 512

Methods of hydrogeologic site characterization for the delineation of environmental problems. Additional independent research paper required for graduate credit.

Prereqs: GEOL 309

HYDR 499 (s) Directed Study (1-16 credits)

Credit arranged

HYDR 500 Master's Research and Thesis (1-16 credits)

Credit arranged

HYDR 501 (s) Seminar (1-16 credits)

Credit arranged.

HYDR 502 (s) Directed Study (1-16 credits)

Credit arranged

HYDR 503 (s) Workshop (1-16 credits)

Credit arranged

HYDR 504 (s) Special Topics (1-16 credits)

Credit arranged

HYDR 509 Quantitative Hydrogeology (3 credits)

Joint-listed with HYDR 409

A rigorous introduction to the description of flow in porous media; the basic equations of potential flow theory as they relate to ground water problems, with application to common engineering problems encountered by hydrogeologists and engineers; dimensional analysis, properties assignment, and heterogeneous systems. Additional reading, presentations, and/or written reports of assigned literature required for graduate credit. Typically Offered: Varies.

HYDR 512 Environmental Hydrogeology (3 credits)

Joint-listed with HYDR 412

Methods of hydrogeologic site characterization for the delineation of environmental problems. Additional independent research paper required for graduate credit.

Prereqs: GEOL 309

HYDR 576 Fundamentals of Modeling Hydrogeologic Systems (3 credits)

Development and application of models representing physical systems, with particular emphasis on ground water flow. Development and solution of the basic equations of potential flow will be covered, along with their assumptions and limitations. Properties assignment, parameter sensitivity, and dimensional analysis will also be discussed. The course will emphasize when modeling is appropriate, how to design a model, and how properties should be selected to achieve meaningful results.

Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 275 or Permission

HYDR 598 (s) Internship (1-16 credits)

Credit arranged

HYDR 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Idaho Fitness (IFIT)

IFIT 106 (s) Fitness and Wellness (1 credit, max arranged)

Movement, physical activity, exercise and wellness courses emphasizing the holistic well-being/fitness of participants (e. g. , Yoga, Pilates, Personal Fitness, Resistance Training, Tai Chi, Mindfulness, etc.). Field trips may be a part of the course requirements. Two to three hours per week. Graded P/F.

IFIT 107 (s) Individual and Team Sports (1 credit, max arranged)

Target, invasion, field, net wall, and outdoor pursuit sport courses (e. g. , golf, disc golf, basketball, soccer, softball, volleyball, table tennis, climbing, fly fishing, sports conditioning, etc.). Field trips may be a part of the course requirements. Two to three hours per week. Graded P/F.

IFIT 108 (s) Water-Based Fitness and Sports (1 credit, max arranged)

Movement, physical activity and exercise performed in the water (e. g. , all levels of proficiency in swimming, water fitness, scuba, etc.). Field trips may be a part of the course requirements. Two to three hours per week. Graded P/F.

Industrial Technology (INDT)

INDT 310 Introduction to Industrial Technology (3 credits)

This course presents an overview of the careers that comprise the field of industrial technology and the courses and curriculum for the degree. Topical areas include the concept of technology, overview of materials and manufacturing, safety science, network technology, electricity and electronics, automation and robotics, energy technologies, and nuclear technology. Recommended preparation: completed general education requirements.

Prereqs: MATH 160 or MATH 170

INDT 332 Introduction to Analog and Digital Electronics (3 credits)

Introduction to the fundamental laws of electrical engineering, circuit analysis – D. C. and A. C. circuits-R-L and C elements – series and parallel circuits; D. C. and A. C. machines, Transformers, and Electrical measurements. Digital electronics: number system and codes; logic gates; Boolean algebra; ALU; introduction to CMOS. Typically Offered: Fall.

Prereqs: INDT 310 or Permission

INDT 333 Industrial Electronics and Control Systems (3 credits)

Introduction to Control Systems: Fundamentals of programmable logic controllers. Logic concepts, Processing unit, input/output systems, peripheral devices, programming techniques, applications and interfacing. Recommended preparation: completed general education requirements.

Prereqs: INDT 332 or Permission

INDT 350 Introduction to Materials Science (3 credits)

Introduction to the fundamentals and applications of materials engineering. Atomic, molecular, and crystalline structures and properties of materials with their relevance to engineering. Topics will include: diffusion, defects, phase diagrams, heat treatment, mechanical behavior, and will cover the different materials classes, i. e. , metals, ceramics, polymers, composites, and semiconductors.

Prereqs: INDT 310 or Permission

INDT 353 Manufacturing Systems (3 credits)

Introduction to manufacturing processes, mechanical and physical properties of materials, and solidification processes. Metal forming, materials removal processes, property enhancing, Joining and Assembly processes, and surface processing operations. Manufacturing systems, automation, and integrated manufacturing systems. Recommended preparation: completed general education requirements.

Prereqs: INDT 350 or Permission

INDT 362 Behavior Based Safety (3 credits)

Principles of paradigm shifts required for total safety, human barriers to safety, the basic principles of behavior-based psychology and behavioral safety analysis and behavior-based interventions.

Prereqs: PSYC 101

INDT 364 Hazardous Materials (3 credits)

Handling, transportation, and storage of hazardous materials; how to protect and suppress fires that occur in hazardous materials. Recommended preparation: completed general education requirements and INDT 310.

Prereqs: CHEM 112/CHEM 112L; and MATH 160 or MATH 170

INDT 400 (s) Seminar (1-16 credits)

Credit arranged

INDT 404 (s) Special Topics (1-16 credits)

Credit arranged

INDT 405 (s) Professional Development (1-16 credits)

Credit arranged

INDT 408 Fire Safety Hazard Analysis (3 credits)

Collect and apply fire incident data and analysis. Conduct fire analysis. Conduct fire loss investigation. Identify the components that, alone or in combination, form emergency and standby power systems. Understand the dynamics of heating systems. Identify basic components and hazards associated with 'hot work' and manufacturing processes dealing with proper storage and handling procedures. Identify the fire hazards of grinding processes. Understand proper design, installation, and maintenance of electrical systems and appliances. Identify common types of refrigeration and associated hazards and their corrective actions. Identify the unique hazard of semiconductor manufacturing.

Prereqs: Permission

INDT 409 Fire Suppression Design and Detection (3 credits)

Identify the operational characteristics of modern fire alarm systems. Identify the proper applications of automatic fire detectors. Evaluate fire alarm systems, testing and maintenance. Identify the requirements and the benefits of fire alarm systems relating to other systems. Identify and understand the properties, proper use and limitations of non-water systems, halogen and carbon dioxide agents. Identify and understand the water supply system requirements as well as the design criteria for hydraulics for fire protection. Identify the properties and limitations of both dry and wet chemical extinguishing agents. Identify the properties and limitations of various foam extinguishing agents. Identify the properties and proper agents and application techniques for combustible metal fires.

Prereqs: Permission

INDT 410 Loss Control (3 credits)

Initiate and coordinate hazard abatement solutions with building managers, plant personnel in providing the corrective actions for life safety and fire protection deficiencies. Use calculations to identify friction loss. Use calculations in determining fire resistive coatings used in buildings. Identify the hazards of explosion prevention and protection. Understand the precautionary need for various types of air-moving equipment. Identify building construction elements for fire protection. Understand the elements of confinement of fire in buildings. Identify and describe the structural damage factors to be evaluated after a fire. Identify fire hazards of construction, alteration and demolition of buildings.

Prereqs: Permission

INDT 411 Fire and Life Safety Management (3 credits)

Conduct complex inspection surveys of commercial and residential properties to evaluate physical characteristics of a property and business. Oversee acquisition, installation, operation, maintenance and disposition of building systems. Understand public protection class and municipal and private water systems. Possess knowledge of property fire insurance, building construction and/or field experience in performing fire/property surveys involving detailed analysis. Observe, examine, inspect, gather data and describe all aspects of a property/building and business. Possess knowledge of fire services, environmental hazards, and building construction.

INDT 412 Engineering for Fire and Life Safety (3 credits)

Identify fire protection in special occupancies. Identify fire protection in warehouse and storage operations. Identify fire protection of electronic equipment. Understand and apply related NFPA standards and company requirements and standards. Evaluate code, law, and regulation compliance of a facility's operations. Identify safety control systems (PLC controllers, hardwired interlock systems) as it applies to: NFPA 70E, 79, 85 and 86 ANSI/ISA 84. 00. 01-2003 (IEC 61511) Safety Integrity Levels 1, 2 or 3. Identify principles of human behavior and fire. Identify the chemistry and physics of fire. Identify dynamics of fire growth. Identify challenges to safety in the built environment. Apply fundamentals of safe building design. Identify the local and regional codes and standards for the built environment.

INDT 413 Community Planning and Design for Fire Protection and Management (3 credits)

Perform pre-incident planning for industrial and commercial facilities. Identify and understand the operations of fire loss prevention and emergency organizations. Evaluate operations of public emergency operations, fire training and communication systems. Identify the use and function of fire emergency services protective clothing and protective equipment. Identify concepts of egress design. Use calculation methods for egress prediction. Develop and manage emergency preparedness procedures and assure all emergency systems and procedures are tested as planned. Identify the elements of the National Incident Management System (NIMS) in relation to emergencies.

Prereqs: Permission

INDT 415 Impact of Technology on Society (3 credits)

In-depth examination of the impact technology has had and will continue to have on society. Recommended preparation: completed general education requirements.

Prereqs: INDT 310 or Permission

INDT 419 Industrial Sustainability Analysis (3 credits)

Cross-listed with TM 419

Joint-listed with TM 519

This course covers two practical topics, which are Sustainability Assessment (Topic 1) and Advanced Manufacturing (Topic 2). Topic 1 establishes the concept of sustainability, and sustainable design and manufacturing. Under this section, we introduce the intersection of sustainability and manufacturing through sustainable development, sustainability principles, and sustainable engineering. Topic 2 provides an overview of what Advanced Manufacturing (AM) is, what approaches are used, what the possible applications are, and what the limitations of the technology are. We focus on AM processes, principles, sustainability performance of AM, and sustainability assessment of AM at the macro and micro level. Students will complete one project including techno-economic and socio-environmental studies in the broad area of food-energy-water processes and systems.

INDT 434 Power Generation and Distribution (3 credits)

Conventional & Non-Conventional methods – comparison of sources of energy. Growth & future trends in power systems; Hydroelectric, Nuclear, and Gas Turbine power plants – merits & demerits; selection of site. Effect of system voltage on transmission efficiency, circuit breakers, kelvin's Law; radial, ring main systems – different types of DC & AC distributors with concentrated loads. Recommended preparation: completed general education requirements.

Prereqs: INDT 332 or Permission

INDT 435 Network Administration (3 credits)

This course provides students with the instruction necessary to install, configure, and troubleshoot a computer network. This course introduces current networking standards, the OSI Model, various protocols and topologies, the interconnections between various hardware components, network operating systems, DNS, DHCP, TCP/ IP, Ethernet, wired and wireless transmission, and security.

Prereqs: MATH 160 or MATH 170; and INDT 310

INDT 442 Systems Integration (3 credits)

This course is designed to provide students with an understanding of Systems Integration (SI) processes, approaches, drivers, tools and techniques required for successful SI, critical success factors, and best practices. The objective of the course is to provide the students an understanding of the technical and business process issues involved in systems integration. Systems integration process is illustrated over the life cycle concept of projects – during design, development, implementation, testing and production. Recommended preparation: completed general education requirements.

Prereqs: INDT 310

INDT 443 Government Contract Law (3 credits)

Contract formation, and contract administration pertaining to government contracts. Recommended preparation: completed general education requirements and INDT 310.

INDT 444 Quality Assurance Organization and Management (3 credits)

Industrial management principles applied to effective economic control of quality assurance activities. Recommended preparation: completed general education requirements.

Prereqs: INDT 310; and STAT 251 or STAT 301

INDT 446 Labor Law (3 credits)

Practical legal considerations in employer/employee relationships, including union contracts. Recommended preparation: completed general education requirements and INDT 310.

INDT 448 Project and Program Management (3 credits)

This course addresses the project/program life-cycle. It defines projects and programs, and the roles and responsibilities of project and program managers. Students are introduced to the related, but differing, techniques for project/program planning (work structuring, budgeting, scheduling, resource allocation), and execution (monitoring, control, auditing, closure). Typically Offered: Summer and Spring.

INDT 450 Comprehensive Exam Preparation (1 credit)

The course prepares students for a comprehensive exam in Industrial Technology. Certified Technology Manager (CTM) exam is required to be taken by all students graduating in Industrial Technology. Typically Offered: Spring.

INDT 453 Computer Integrated and Robotics Manufacturing Technology (3 credits)

The course provides an overview of computer integrated manufacturing technology with a focus on robotic automation. Covered topics include: computer aided design, computer aided manufacturing, automated production lines and assembly systems, cellular and flexible manufacturing. The integration of hardware and software components for manufacturing automation is studied, with an emphasis on sensors, actuators, controllers, computer numerical control, and kinematic modeling of industrial robots. Enrollment per section limited to lab stations available.

Prereqs: INDT 353 or Permission

INDT 457 Lean to Green Sustainable Technology (3 credits)

Lean production and lean manufacturing refer to the use of systematic methods to reduce costs by eliminating wastes and nonvalue-added activities, while delivering what the customer wants, on time. Even without explicitly targeting environmental outcomes, lean efforts can yield substantial environmental benefits. Recommended preparation: completed general education requirements.

Prereqs: INDT 353 or Permission

INDT 462 Industrial Safety (3 credits)

Overview of industrial safety and health in business and industry. Includes Program Organization, Hazard Information, and Program Implementation. Recommended preparation: completed general education requirements.

Prereqs: INDT 362

INDT 464 Human Performance Fundamentals (3 credits)

Introduction to the factors that control and influence human performance. Explore the basis of individual and leader behaviors as well as organizational processes and values that either lead to or prevent error. Fundamental knowledge of human and organizational behavior is emphasized so that the manager, supervisor, and worker can better handle error-provoking work situations to prevent human error and workplace events. Recommended preparation: completed general education requirements.

Prereqs: INDT 362

INDT 466 Human Performance Field Investigation (3 credits)

Provides education in the area of participating in an investigation of an incident that has a significant human contribution. Principles of the old view of human error – the problems it holds, the traps it represents, and the temptations that can make one fall into them. The new view of human error in which human error is the starting point for an investigation. Reconstruct the human contribution to system failure and "reverse engineer" the evolving mindset of personnel who were caught up in an event. Investigate the biases and difficulties in understanding past behavior associated with system failure. Recommended preparation: completed general education requirements.

Prereqs: INDT 464

INDT 470 Homeland Security (3 credits)

This course will provide students with a basic understanding of terrorism involving Weapons of Mass Destruction (WMD) (e. g. biological, nuclear, incendiary, chemical, radiological, and explosive devices). The history of WMD/Terrorism and how it relates to modern day devices and concepts will be discussed. The students will gain an understanding of international terrorism and homegrown terrorists. Recommended preparation: completed general education requirements.

INDT 472 National Incident Management Systems (3 credits)

This course is designed to increase the participants' knowledge and understanding of the inherent flexibility of the Incident Command System to manage major or complex incidents. Utilizing lectures and small group activities, participants will acquire an in-depth knowledge of the National Incident Management System (NIMS), terminology, players, and management philosophy. Participants will also acquire the ability to organize and manage major or complex incidents. The material covered during the course includes command and general staff duties and responsibilities, unified command, major incident management and area command structures. Recommended preparation: completed general education requirements.

INDT 473 Fundamentals of Unmanned Aerial Systems (3 credits)

The course introduces students to unmanned aerial systems (UAS) and provides an overview of UAS types, applications, and operation considerations. The general principles of aerodynamics, propulsion, navigation and stability control applied to UAS are studied. The course provides an in-depth coverage of the main components integrated in both civilian and military UAS, such as payloads, ground control systems, communication data links, and launch/recovery systems.

Prereqs: General Technical Background

INDT 475 Introduction to Non-Destructive Testing (3 credits)

The course introduces students to methods, techniques, and equipment for non-destructive testing. The basic concepts and principles of visual, liquid penetrant, magnetic particles, ultrasonic, radiographic, eddy current, and thermal testing are covered.

Prereqs: INDT 350 or Permission

INDT 484 Industrial Technology Capstone I (3 credits)

Gen Ed: Senior Experience This course is the first of two capstone courses. The students will select and develop a project that applies technology to a problem. Students are encouraged to incorporate service learning into the project and work in teams. One hour of lecture and two 3-hour labs per week. Recommended preparation: Senior standing.

Prereqs: INDT 442 and INDT 444

INDT 485 Industrial Technology Capstone II (3 credits)

This course is second of the two capstone courses. The students will develop their project that applies technology to a problem. Students are encouraged to incorporate service learning into the project and to work in teams. One hour of lecture and two 3-hour labs per week. Recommended preparation: Senior standing.

Prereqs: INDT 442 and INDT 444

INDT 499 (s) Directed Study (1-16 credits)

Credit arranged

Interdisciplinary Studies (INTR)

INTR 101 (s) Focus on Success (1-3 credits, max 6)

Develop strategies to help you meet the demands of college-level course work. Includes goal setting, study skills, learning strategies, time management, effective communication skills. This course will introduce you to University requirements and resources, and help you integrate into the academic and social environment at the UI.

INTR 140 Academic Engagement (1 credit)

This course for new first-year and transfer honors students introduces students to the Honors Program community and prepares them for the academic expectations of the program. This course is required and provides new students with an opportunity to think about their expectations and the goals surrounding their college education and introduces them to academic and co-curricular resources available at the university. Typically Offered: Fall.

INTR 200 (s) Seminar (1 credit)

Credit arranged

INTR 201 Major/Career Exploration and Decision Making (1 credit)

Students are taken through the career decision-making process. Through career assessments, occupation & industry research, and informational interviews, students will learn about themselves and explore possible careers in order to narrow down their options and make informed major and career decisions.

INTR 203 (s) Workshop (1-16 credits)

Credit arranged

INTR 204 (s) Special Topics (1-16 credits)

Credit arranged

INTR 210 College Success Strategies for Student-Athletes (2 credits)

College Success Strategies for Student-Athletes is a comprehensive course that integrates personal growth, academic study strategies, along with critical and creative thinking. Emphasis is on the attainment of lifelong success in academic, professional, and personal development.

Typically Offered: Fall/Spring.

INTR 240 Scholarly Communication (1 credit)

This course teaches students how to present their research and scholarly work in written and oral forms, including how to approach a senior or honors thesis, how to prepare abstracts for scholarly conference submissions, how to create conference poster and panel presentations, how to prepare manuscripts for peer review, and how to write a winning grant proposal. This course teaches valuable insights about how to communicate research.

INTR 298 (s) Internship (1-16 credits)

Credit arranged

INTR 299 (s) Directed Study (1-16 credits)

Credit arranged

INTR 350 (s) Reading with Purpose (1-3 credits, max 6)

Designed to encourage students to read a text that has interdisciplinary implications. The texts are chosen from books adopted as Common Reads across the U. S. or other texts that can be explored from an interdisciplinary lens. The course will involve reading, journals, quizzes, and a paper all with the primary aim of providing students an opportunity to consider their connections to the text and how the text speaks to their unique intersection of disciplines or identities. Typically Offered: Varies.

INTR 398 (s) Internship (1-16 credits)

Credit arranged

INTR 400 (s) Seminar (1-16 credits)

Credit arranged

INTR 401 Career and Leadership Development (2 credits)

General Education: Senior Experience

Provides students with information, resources and tools to help them explore careers, set goals, and make informed educational and career choices. Students will enhance their leadership skills, explore abilities, interests, and values in preparation to excel in the post-graduation world. A main focus of the class will be identifying and assessing strengths, direct and transferable skills students possess, and how to market and effectively communicate the value such skills bring to an organization, graduate program or employer post-graduation. Senior experience seminar for students in general studies and interdisciplinary studies.

Prereqs: Junior standing or higher**INTR 403 (s) Workshop (1-16 credits)**

Credit arranged

INTR 404 (s) Special Topics (1-16 credits)

Credit arranged

INTR 405 (s) Professional Development (1-16 credits)

Joint-listed with INTR 505

Credit arranged

INTR 440 Honors Presentations (1 credit)

General Education: Senior Experience

This University Honors Program course is designed for honors students who are actively working towards completing an honors thesis or honors portfolio by the time they graduate from the university and the honors program with an undergraduate degree. The course is intended to assist students with the final assignment of their honors thesis or honors portfolio, i. e. the public presentation of their thesis or portfolio work at the bi-annual Honors Forum in either December or May each year.

Typically Offered: Varies.

INTR 450 University Interdisciplinary Colloquium (1 credit, max 6)

This course meets in conjunction with the Malcolm Renfrew Interdisciplinary Colloquium, a campus-wide speaker series that meets weekly on Tuesdays during the Fall and Spring semesters. The presentations concern various aspects of teaching and research on campus, and are delivered by faculty and staff from across the university. Attendance at the presentations is required, and students are expected to submit their class notes and reaction essays for each presentation at the end of the semester. Graded Pass/Fail.

INTR 454 Honors Thesis or Portfolio (3 credits)

General Education: Senior Experience

This University Honors Program course is designed for honors students who are actively working towards completing an honors thesis or an honors portfolio by the time they graduate from the university and complete the honors program. After researching and writing their honors thesis or completing their honors professional portfolio, students are expected to enroll in INTR 440 Honors Presentations, usually during their last semester at the University of Idaho when they present their findings at the public Honors Forum in either December or May each year. Typically Offered: Varies.

INTR 455 Producing The Looking Glass (1 credit)

This course offers students in the University Honors Program an opportunity to learn how to produce the program's student publication, "The Looking Glass." The one-credit course includes developing or reviewing criteria for submissions, sending out calls for submissions from honors students, hosting submission sessions, reviewing submissions, editing submissions, and editing and publishing the final product, the annual publication "The Looking Glass."

INTR 489 Honors Program Ambassadors (1 credit, max 8)

Student Ambassadors are selected through an application and interview process. Students will learn leadership, communication, networking and public speaking skills. Students will meet in the classroom with the instructor and will be responsible for representing the University Honors Program at various on- and off-campus events and activities.

INTR 491 College of Letters, Arts, and Social Sciences Ambassadors (1-16 credits)

Credit arranged. Student ambassadors are selected through an application and interview process. Students will learn skills in leadership, communication, networking, public speaking and time management. Students will be responsible for representing the College of Letters, Arts and Social Sciences in various recruiting activities and events.

INTR 492 College of Science Ambassadors (1 credit, max 8)

Student ambassadors are selected through an application and interview process. Students will learn skills in leadership, communication, networking, and public speaking. Students will be responsible for representing the College of Science in various recruiting activities and events.

Prereqs: Permission

INTR 496 Pre-Health Peer Mentors (1 credit, max 4)

Pre-health peer mentors are selected through an application and interview process. The mentor program will help promote a welcoming and supportive community for pre-health-professions-focused students new to the University of Idaho, while providing mentors the opportunity to further develop the inter- and intra-personal competencies expected of future healthcare professionals. These competencies include collaboration, communication, service orientation, and ethical responsibility to self and others.

INTR 498 (s) Internship (1-16 credits)

Tutorial services performed by advanced students under faculty supervision.

Prereqs: Permission.

INTR 499 (s) Directed Study (1-16 credits)

Credit arranged

INTR 500 Master's Research and Thesis (1-16 credits)

Credit arranged

INTR 501 (s) Seminar (1-16 credits)

Credit arranged

INTR 502 (s) Directed Study (1-16 credits)

Credit arranged

INTR 503 (s) Workshop (1-16 credits)

Credit arranged

INTR 504 (s) Special Topics (1-16 credits)

Credit arranged

INTR 505 (s) Professional Development (1-16 credits)

Joint-listed with INTR 405

Credit arranged

INTR 508 Teaching and Learning Strategies for International Teaching Assistants (1 credit)

This course is designed to help International Teaching Assistants become better teachers and facilitators of student learning. The course will include mentoring through classroom teaching and observation sessions. Graded Pass/Fail.

INTR 509 Introduction to Applied Data Science (3 credits)

Data science is a growing field of study that impacts nearly every aspect of our daily lives. While many data science courses focus on software engineering and predictive analytics, the purpose of this course is to provide students with a strong foundation of data-related skills. This course is a broad introduction into the field of data science, focusing on growing the students' conceptual understanding of data and data science while also providing them with a practical data-oriented skill set that will translate into most scientific careers. Typically Offered: Fall and Summer.

INTR 598 (s) Internship (1-16 credits)

Credit arranged

INTR 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Interior Architecture and Design (IAD)

IAD 151 Introduction to Interior Architecture and Design (3 credits)

Introduction to interior design theory and process. Explores transdisciplinary design issues and relationships; emphasis areas include basic design theories, vocabulary, and sustainability of the built environment. Attendance at outside events (such as lectures and symposiums) is required.

IAD 152 Interior Architecture and Design I (3 credits)

Study of the relationship of design theories to the interior environment; exploration, through a variety of media, of the elements and principles of design, with emphasis on spatial relationships and color theory. Focus of design problems is residential design and small-scale contract design. Attendance at outside events and some class critique sessions outside of scheduled hours required at student expense.

Prereqs: IAD 151 or Permission

Coreqs: ARCH 154

IAD 200 (s) Seminar (1-16 credits)

Credit arranged

IAD 203 (s) Workshop (1-16 credits)

Credit arranged

IAD 204 (s) Special Topics (1-16 credits)

Credit arranged

IAD 231 Design Communication (2 credits)

Development of design communication tools and practices relevant to interior architecture and design, including presentation techniques using various materials/methods for communication of design processes and solutions, as well as development of interior architecture and design branding and portfolios.

Prereqs: Admission to Second Year/Sophomore Standing

IAD 244 Computer Aided Drafting and Modeling (2 credits)

Introduction to computer-aided drafting and modeling techniques and applications.

Prereqs: ARCH 154

IAD 254 Architectural Design II (4 credits)

Cross-listed with ARCH 254

Basic integration of principles and concepts for architectural design, both interior & exterior. Two 3-hour studios per week and assigned work.

Prereqs: ARCH 253 or Permission

Coreqs: ARCH 243

IAD 281 History of Interiors I (3 credits)

Gen Ed: International Historical survey of major periods in furniture and interior environments from Antiquity to Neoclassicism; exploring the cultural, social, political and aesthetic influences on interior design theories, movements, and traditions at the local and global contexts. The course includes a hands-on project and potential field trip at student expense.

IAD 282 History of Interiors II (3 credits)

Gen Ed: International Historical survey of major periods in furniture and interior environments from the industrial revolution to the present; exploring the cultural, social, political, and aesthetic influences on interior design theories, movements, and traditions at the local and global contexts. The course includes a hands-on project and potential field trip at student expense.

Prereqs: IAD 281 or Permission.

IAD 299 (s) Directed Study (1-16 credits)

Credit arranged

IAD 332 Furniture Design and Construction (4 credits)

Theory and application of furniture design and construction emphasizing the continuing development of three-dimensional design skills and attention to physical detail; aspects of structure, ergonomics, and aesthetics are addressed in process of designing and constructing furniture pieces. One and one-half hours of lecture and 3 hours of lab per week in class meetings. Recommended Preparation: IAD 281, IAD 282.

Prereqs: or

Coreqs: IAD 351 or Permission

IAD 344 Digital Tools for Interior Architecture and Design (3 credits)

Introduction to industry specific software programs, with emphasis on Revit, for use in designing habitable spaces and environments. Including but not limited to 3-D modeling, detailing custom furniture design, construction documentation, preliminary introduction to workflows and strategies designed to give students a leg-up in professional work environments. Typically Offered: Fall.

Coreqs: IAD 351

IAD 351 Interior Architecture and Design III (6 credits)

Sequence of advanced residential and small scale contract design projects requiring integration of design theories and process in relationship to critical problem solving. Emphasis on formation of interior spaces to correspond to function and flow patterns. Nine hours of studio per week; field trips required at student expense; some class jury sessions outside of scheduled hours.

Prereqs: IAD 152 and IAD 254 or Permission

IAD 352 Interior Architecture and Design IV (6 credits)

Sequence of large scale contact and other design projects requiring application of expanded design process including problem identification, analysis, program development, conceptual and design development and solution presentation. Implementation of lighting, codes, systems furniture, and interior specifications in the design process. Nine hours of studio per week; field trips required at student expense; some class jury sessions outside of scheduled hours.

Prereqs: IAD 351

IAD 368 Interior Materials and Specifications (3 credits)

In-depth study of interior finishes, furnishings, materials, and products; emphasis on performance characteristics, fabrication and installation methods, testing, codes, specifications, professional liability, and influences on human and environmental well-being. Field trips required at student expense.

IAD 400 (s) Seminar (1-16 credits)

Credit arranged

IAD 403 (s) Workshop (1-16 credits)

Credit arranged

IAD 404 (s) Special Topics (1-16 credits)

Credit arranged

IAD 410 Capstone Proposal Development (2 credits)

Capstone Studio proposal development requiring systematic approach to the development of project proposal in preparation for IAD 452. 8 week course.

Coreqs: IAD 451

IAD 415 Design Management (3 credits)

This course aims to provide a foundation of business knowledge that will prepare design students to work in management. Class based on lectures and case studies.

Prereqs: Junior standing or higher

IAD 417 Instructional Experience (2 credits, max 6)

Supervised development of instructional and mentoring skills. Instructional Assistants will assist instructors in delivering and assisting in courses and curricular activities, to include working with instructor and students on facilitating discussions, study sessions, critiques and other related activities. Instructional assistants will have responsibilities related to classroom and teaching technology set up, taking roll, and other administrative or logistical tasks per instructor's guidance. Instructional assistants cannot award or enter grades. FERPA training, best practices discussion, and passing of FERPA quiz required. Typically Offered: Fall and Spring.

Prereqs: Third and Fourth-year standing in Interior Architecture & Design Program curriculum verified at program level, Program Permission required to enroll in the course.

IAD 443 Universal Design (3 credits)

General Education: American Diversity

Introduction to and application of universal design and accessible design concepts, principles, products, standards, laws, regulations, and guidelines to the design and adaptation of the built environment. Attendance at outside events (such as lectures, simulations, and completion of a service learning component) is required. One and a half hours of lecture and 3 hours arranged per week. Recommended Preparation: IAD 254 or ARCH 254. Typically Offered: Spring.

IAD 451 Interior Architecture and Design V (6 credits)

Advanced problems in mixed use contract interior design requiring synthesis of related course work into comprehensive design resolution that communicates design impact on sense of place and place making; projects will seek to refine the design decision making process by requiring in-depth programming, client participation, and development beyond schematic phases, e. g. , integration of building systems, lighting design, interdisciplinary investigation, and understanding of cultural/ environmental context. Nine hours of studio per week and assigned work; field trips required at student expense; some class jury sessions will meet outside of scheduled hours. Recommended Preparation: IAD 443.

Prereqs: IAD 352

IAD 452 Interior Architecture and Design VI (6 credits)

General Education: Senior Experience

Capstone studio course featuring advanced applications of design theories and processes focusing on complex design issues, synthesis and implementation of previous course work in appropriate student selected project, from the initial programming through the final complete design documentation and presentation. Nine hours of studio per week and assigned work; field trips required at student expense; some class jury sessions will meet outside scheduled hours.

Prereqs: IAD 410 and IAD 451

IAD 498 (s) Internship (1-16 credits)

Credit arranged

IAD 499 (s) Directed Study (1-16 credits)

Credit arranged

International Studies (IS)

IS 195 International Studies Freshman Seminar (3 credits)

Introductory course recommended of all International Studies majors in their freshman year. Focuses on introducing interdisciplinary training in global, regional, and issue emphases through oral and written presentations. (Spring only)

IS 200 (s) Seminar (1-16 credits)

Credit arranged

IS 203 (s) Workshop (1-16 credits)

Credit arranged

IS 204 (s) Special Topics (1-16 credits)

Credit arranged

IS 225 International Environmental Issues Seminar (3 credits)

General Education: International

Cross-listed with ENVS 225

Gen Ed: International Designed for individuals who have an interest in understanding environmental issues from a global perspective. The course focuses on various social and physical issues related to the environment and natural resources using human population dynamics as a backdrop. ENVS 101 recommended. (Spring only)

IS 298 (s) Internship (1-16 credits)

Credit arranged

IS 299 (s) Directed Study (1-16 credits)

Credit arranged

IS 310 The United Nations (3 credits)

Overview of principle UN agencies and current UN activities; emphasis on written and oral presentations through resolution and position paper writing, negotiations, and small group discussions. (Fall only)

IS 320 Model United Nations (2 credits)

Advanced preparation for IS 310 members selected to attend the National MUN Conference in New York; emphasis on a particular country and region through study of political, social, and economic indicators, policy goals, and bloc negotiations. (Spring only)

Prereqs: IS 310**IS 321 UN and Related Agencies (1 credit)**

1 credit Companion course to IS 320, this course permits students to further hone their knowledge of a particular UN or related agency through a combination of directed study and roundtable discussions.

Coreqs: IS 320**IS 322 International Environmental Governance (3 credits)**

Overview of principle international environmental agencies and their current activities, with an emphasis on the UN Environment Programme and the organizations which oversee major environmental treaties.

Typically Offered: Varies.

IS 323 Global Economic Governance (3 credits)

Explores the interaction of countries and international economic/financial institutions, with focus on the political questions that arise from said interaction and organizational policies, the effect of and the conditions for cooperation in international trade and finance, and related legal questions from the treaties that govern this type of cooperation.

Recommended Preparation: ECON 201 and POLS 237 or IS 310. Typically Offered: Spring (Even Years).

IS 325 The Contemporary Muslim World (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Gen Ed: Social Science, International Focus on the states in the

Organization of the Islamic Conference, with an emphasis on framing the region, social and popular questions, economic issues, and the global stage.

IS 326 Africa Today (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Focus on the states in Africa, with an emphasis on politics, economy and development, culture and society, and current issues.

IS 350 Sports and International Affairs (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Exploration of the relationship between sports and politics, nationalism, economics, society, and culture as they play out in the international arena.

IS 370 African Community, Culture, and Music (1-3 credits, max 3)

General Education: Humanistic and Artistic Ways of Knowing, International

Focus on regional and/or national communities and cultures in Africa with an emphasis on musical traditions. Experience based including preparation in the US, field work in one or more African countries, and substantive evaluation after return.

IS 384 African Politics (3 credits)

Cross-listed with POLS 384

Exploration of the politics of African countries, beginning with the historical roots of colonialism and decolonization, but concentrating on contemporary issues of state building, war and conflict, development, democratization, and international and regional relations.

IS 398 (s) Internship (1-16 credits)

Credit arranged

IS 400 (s) Seminar (1-16 credits)

Credit arranged

IS 403 (s) Workshop (1-16 credits)

Credit arranged

IS 404 (s) Special Topics (1-16 credits)

Credit arranged

IS 410 NGOs in the International System (3 credits)

A comparative analysis of nongovernmental organization types, functions, strategies, funding mechanisms, accountability, challenges, and collaborations with other international organizations.

IS 426 Seminar in Africana Studies (3 credits)

This course examines aspects of Africana History, Contemporary Africana politics, the creation of the diaspora, contemporary race relations, Africana literature, and Africana music. It will incorporate theories on African development, globalization, and racial formation as it explores these topics. This course will be co-taught by affiliated faculty in the Africana Studies and International Studies program, each presenting on their area of expertise.

IS 440 (s) International Organizations and International Law (3 credits)

Cross-listed with POLS 440

League of Nations, United Nations, and role of international law in international relations; the UN's contribution to international security and economic and social development.

IS 441 International Protection of Human Rights (3 credits)

Focus on the law and politics of international human rights, examining the various actors involved in the promotion of human rights around the globe, and exploring competing conceptions of human rights, whether human rights are universal, problems of enforcement, and the role of human rights in foreign policy.

IS 485 (s) Martin Scholars (3 credits)

The Martin Scholars program considers a topic related to international conflict and the resolution thereof in a broad context, with specific topics mutually selected by a designated faculty member and the director of the Martin Institute. It serves a small group of students each fall term, with additional work carried out over the course of the ensuing spring term while the Martin Scholars produce masters-level research on that year's specific topics.

Prereqs: Department Permission

IS 495 International Studies Senior Seminar (3 credits)

General Education: Senior Experience

Capstone course required of all International Studies majors in their senior year. Focuses on incorporating interdisciplinary training in global, regional, and issue emphases through oral and written presentations. (Spring only)

Prereqs: Senior standing, International Studies major or Permission

IS 497 Practicum in Instruction (2 credits)

Tutoring and/or instructional services performed by advanced students under faculty supervision. (Spring only)

Prereqs: IS 310, IS 320, and Permission

IS 498 (s) Internship (1-16 credits)

Credit arranged

IS 499 (s) Directed Study (1-16 credits)

Credit arranged

Japanese (JAPN)

Vertically-related courses in this subject field are: JAPN 101 - JAPN 102 - JAPN 201 - JAPN 202. Any 300-level JAPN course may be considered the terminal course for the related vertical sequence above. A maximum of 16 credits may be earned for vertical credit in any language in the School of Global Studies.

JAPN 101 Elementary Japanese I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Writing system, pronunciation, vocabulary, and functional grammar. Students identified by the instructor as having some degree of Japanese proficiency must take the placement exam. Students with Japanese experience who place higher than JAPN 101 on the placement exam may not enroll in JAPN 101, but may earn credit for JAPN 101 by successfully completing a higher vertically-related course. Typically Offered: Every fall. Cooperative: open to WSU degree-seeking students.

JAPN 102 Elementary Japanese II (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Writing system, pronunciation, vocabulary, and functional grammar. Typically Offered: Spring.

Prereqs: JAPN 101 or placement exam. Cooperative: open to WSU degree-seeking students.

JAPN 107 Beginning Japanese Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the beginning Japanese level. Graded P/F.

JAPN 201 Intermediate Japanese I (4 credits)

General Education: International

A beginning intermediate course; review and practice of basic language skills; increased emphasis on reading and free discussion. Typically Offered: Fall.

Prereqs: JAPN 102 or placement exam

JAPN 202 Intermediate Japanese II (4 credits)

General Education: International

An intermediate course; review and practice of basic language skills; increased emphasis on reading and free discussion. Typically Offered: Spring.

Prereqs: JAPN 201 or placement exam

JAPN 204 (s) Special Topics (1-16 credits)

Credit arranged

JAPN 207 Intermediate Japanese Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the intermediate Japanese level. Graded P/F.

JAPN 299 (s) Directed Study (1-16 credits)

Credit arranged

JAPN 301 Japanese Reading and Writing (3 credits)

General Education: International

Emphasis on the development of reading and writing skills at the advanced intermediate level; some emphasis on grammar, vocabulary and kanji character acquisition. Typically Offered: Fall.

Prereqs: JAPN 202 or placement test

JAPN 303 Japanese Listening and Speaking (3 credits)

General Education: International

Emphasis on the development of listening and speaking skills at the advanced intermediate level; focus on utilizing honorific, modest, and respect expressions. Typically Offered: Spring.

Prereqs: JAPN 202 or placement test

JAPN 404 (s) Special Topics (1-16 credits)

Credit arranged

JAPN 498 (s) Internship (1-16 credits)

Credit arranged

JAPN 499 (s) Directed Study (1-16 credits)

Credit arranged

Journalism/Mass Media (JAMM)

Vertically-related courses in this subject field are: FTV 122 - JAMM 122 - JAMM 275.

JAMM 100 Media and Society (3 credits)

General Education: Social and Behavioral Ways of Knowing

Overview of mass communication: history and structure of media organizations; the political, economic and social context of media; legal and ethical considerations; media literacy; cultural approaches to mass communication research. Typically Offered: Fall and Spring.

JAMM 121 Media Writing (3 credits)

Basic principles of writing for print, broadcast and online media; skills in identifying and evaluating credible information. Typically Offered: Fall and Spring.

Prereqs: ENGL 102 with a grade of 'C' or better

JAMM 122 Content Creation (3 credits)

Principles of media storytelling emphasizing practical application in photography, audio, video and media design. Typically Offered: Fall and Spring.

Prereqs: ENGL 102 with a grade of 'C' or better

JAMM 200 (s) Seminar (1-16 credits)

Credit arranged

JAMM 203 (s) Workshop (1-16 credits)

Credit arranged

JAMM 204 (s) Special Topics (1-16 credits)

Credit arranged

JAMM 225 Reporting I (3 credits)

Writing news for print, broadcast and online media. Introduction to newsroom structures and processes, news judgment and decision making. Two 2-hour lecture/labs per week.

Prereqs: JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better

JAMM 231 Introduction to Screenwriting (3 credits)

Cross-listed with ENGL 231

Introduction to the elements of screenwriting; students explore narrative techniques through the study of the short film form, using genre, developing characters, and advancing a story by effectively using cinematic language. Recommended Preparation: FTV 100.

JAMM 252 Introduction to Strategic Communications (3 credits)

Overview of the issues and methods used by public relations and advertising. Requires that participants engage with their peers to discuss readings, theoretical perspectives, obstacles, history and current events in the strategic combination of advertising and public relations. Typically Offered: Fall and Spring.

Prereqs: JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better

JAMM 267 Introduction to Media Design (3 credits)

Foundational principles and theories of visual communication; use of graphics to communicate information and support persuasive appeals; hands-on learning using industry standard graphic applications.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better

JAMM 275 Introduction to Film and TV Production (4 credits)

Principles of digital audio and video production and writing; concentration on skills such as writing, producing, directing, sound recording and mixing, lighting, camera work, and editing for narrative and non-narrative storytelling. Work with digital and high-definition equipment for field and studio production. Hands-on experience, criticism, and revision are emphasized. Two 75-minute lectures and one 2-hour lab per week.

Prereqs: JAMM 100 and JAMM 121 and JAMM 122 with grades of 'C' or better, or FTV 100 and FTV 122 with grades of 'C' or better, or Permission

JAMM 276 Video Post-Production (3 credits)

Exploration of post-production processes, roles, aesthetics, and techniques. Students learn to effectively manipulate video and audio into creative and cohesive works. Typically Offered: unknown.

Prereqs: JAMM 275

JAMM 298 (s) Internship (1-16 credits)

Credit arranged

JAMM 299 (s) Directed Study (1-16 credits)

Credit arranged

JAMM 322 Broadcast News (3 credits)

News reporting for radio, television and the Internet, emphasizing writing, editing, producing, and on-air performance skills; analysis of broadcast news practices. Recommended preparation: JAMM 275. Typically Offered: Fall.

Prereqs: JAMM 225 with a grade of C or better

JAMM 323 Sports Reporting (3 credits)

Sports reporting for television, radio and the Internet; emphasizes writing, editing, producing, camera work and on-air performance skills. Focus on interviews, team coverage, game highlights. Recommended Preparation: JAMM 322 Typically Offered: Fall.

Prereqs: JAMM 225 or JAMM 275

JAMM 325 Publications Editing (3 credits)

Introduction to the development, management, editing, design and distribution of print and web publications; focuses on periodicals, such as magazines and student-originated projects. Typically Offered: Varies.

Prereqs: JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better.

JAMM 327 Reporting II (3 credits)

Interviewing, database research, access to public records and meetings, and development of in-depth news story structure. Includes coverage of government, politics and other public issues. Recommended Preparation: POLS 275.

Prereqs: JAMM 100, JAMM 121 and JAMM 122 with grades of 'C' or better; and JAMM 225 or Permission

JAMM 328 Science Writing (3 credits)

Cross-listed with ENGL 318

Principles and practices of making scientific concepts and work accessible to general audiences through multiple forms of media; also examines the ways in which media coverage of scientific issues shapes public opinion and policy.

Prereqs: ENGL 102 and Sophomore Standing

JAMM 339 Crime and the Media (3 credits)

Cross-listed with CRIM 339

Critical evaluation of the media portrayals of crime and the criminal justice system; analysis of how the media help to shape public understanding and public policy.

JAMM 340 Media and Diversity (3 credits)

General Education: American Diversity

An examination of mass media's relationship to cultural diversity, including the social impact of media representations and the uses of mass media by diverse groups. Typically Offered: Varies.

Prereqs: Sophomore standing

JAMM 341 Mass Media Ethics (3 credits)

A critical examination of ethical issues confronting journalists and other media practitioners. Includes moral analysis, argument and decision-making by media organizations. Case studies drawn from journalism, broadcasting, advertising, public relations and digital media.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better, and Junior Standing, and a Major in the School of Journalism and Mass Media

JAMM 350 Public Relations Writing and Production (3 credits)

Public relations writing, publication and design processes for print, broadcast and online media. Two 2-hr lectures/labs a wk. Typically Offered: Fall.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 252

JAMM 352 Event Planning and Management (3 credits)

Logistical skills for planning, managing, and promoting events. Students complete an original management plan for execution. Typically Offered: unknown.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with a grade of 'C' or better; or FTV 100 with a grade of 'C' or better

JAMM 361 Advertising Creativity (3 credits)

Advertising creative process in print, broadcast and online media, including copywriting and production processes and techniques.

Recommended preparation: ART 110.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 267

JAMM 365 Trends in Social Media (3 credits)

Trends in the culture, history, theory, technology and audience impact of social media and uses of social media for advertising, marketing, public relations, self expression or journalism purposes. Typically Offered: Varies.

Prereqs: JAMM 121 and JAMM 122 with grades of 'C' or better

JAMM 367 Social Media Management and Analytics (3 credits)

How to analyze and understand the metric effect social media has on consumer behavior, campaign effectiveness and the return on investment (ROI) of social media in a media plan. Typically Offered: Fall.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better, and JAMM 252

JAMM 370 Podcasting (3 credits)

Audio production principles and storytelling techniques, with an emphasis on serial audio production, writing, and announcing skills.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with a grade of 'C' or better

JAMM 374 Intermediate Film and TV Production (3 credits)

Film and television production techniques and aesthetics. Students will write, produce, direct, and revise video projects. Includes pre-production planning, aesthetics, and post-production realizations.

Prereqs: JAMM 275

JAMM 378 American Television Genres (3 credits)

Historic development of dominant television genres, discussion of characteristics unique to each genre; examination of the cultural context of television programming.

Prereqs: Sophomore standing

JAMM 379 Hollywood Portrayals of Journalists (3 credits)

Addresses the evolving relationship between the American people and their media. It examines the conflicting images of journalists in movies and television and discusses the influence of these images on the American public's perception of news gatherers in the 20th and 21st centuries.

Prereqs: Sophomore standing

JAMM 400 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better

JAMM 403 (s) Workshop (1-16 credits)

Credit arranged. May be graded P/F.

JAMM 404 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better

JAMM 405 Professional Development for Secondary Teachers (1-3 credits)

Exposure to current developments in mass media, including technology, law and ethics; supervised experience in writing, editing, publication design, video production and Internet publication; work with high school, college students and professional journalists in a workshop setting. (Summer only)

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better

JAMM 422 Advanced Journalism (3 credits)

Advanced news reporting for print, broadcast, and online news outlets, emphasizing writing, editing, design, and production; analysis of news judgments and decision making.

Prereqs: JAMM 327

JAMM 425 Magazine Writing (3 credits)

Strategies and approaches for writing and producing human-interest stories for print and online magazines; introduction to a variety of feature-writing styles, including columns, reviews, and arts and culture coverage.

Prereqs: JAMM 225 or Permission

JAMM 426 Narrative Journalism (3 credits)

An examination of the roots and development of American narrative journalism, with an emphasis on contemporary examples and their location in a digital world. Includes critical analysis of narrative structure, sourcing, audio/visual storytelling techniques and audience reception.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Junior standing or above

JAMM 440 Critical Issues in Mass Media (3 credits)

Examination of critical approaches to mass media, including interdisciplinary interpretations of media forms and content. Addresses how new media technologies are changing how media users acquire, distribute and use information. Analyzes media impact on American culture from a variety of critical perspectives.

Prereqs: Junior standing

JAMM 441 (s) (s)Adv Concepts Media/Diversity (3 credits, max 6)

General Education: American Diversity

A detailed exploration of a key issue or theory within mass media relating to cultural, social, or global diversity. Typically Offered: Varies.

Prereqs: Junior Standing

JAMM 443 Media Management and Economics (3 credits)

Management principles as they apply to mass media; emphasis on personnel management, budgeting, programming, sales, marketing and promotion, legal constraints, new technologies, and strategic planning; study of media ownership.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better

JAMM 444 Mass Media and Public Opinion (3 credits)

Role of media in the formation of public opinion; overview of survey methodology and interpretation.

Prereqs: Junior standing

JAMM 445 History of Mass Media (3 credits)

General Education: American Diversity

Develops core historical understanding of significant social, political, economic, and technological developments in the mass media with a focus on cultural diversity and social power. Topics may include the media as independent witnesses to human events, the role of audiences, contributions made by underrepresented groups, or the importance of a free press to democracy. Typically Offered: Varies.

Prereqs: Junior standing

JAMM 446 Women in the Media (3 credits)

Examines the spaces that women occupy in the media, both in front of and behind the camera. Focuses on feminist critiques of the media and issues of representation in a variety of mediums and topics (film, television, print, news, advertising).

Prereqs: JAMM 100 with a grade of 'C' or better and JAMM 121 with a grade of 'C' or better and JAMM 122 with a grade of 'C' or better.

JAMM 447 Screenwriting (3 credits)

Cross-listed with ENGL 447, THE 447

Joint-listed with ENGL 547, THE 547

Introduction to the study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.

Prereqs: ENGL 231 or JAMM 231 or permission

JAMM 448 Law of Mass Media (3 credits)

General Education: Senior Experience

An examination of the legal framework governing the gathering, preparation, and dissemination of information, advertising and entertainment in the United States and globally. Topics include First Amendment, defamation, invasion of privacy, intellectual property, copyright, access to governmental proceedings and records, and regulation of broadcasting, satellite, and cable television.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Senior standing and a major in the School of Journalism and Mass Media

JAMM 450 Public Relations Trends (3 credits)

A detailed exploration of a key issue within mass media relating to public relations and strategic communication. Typically Offered: Spring.

Prereqs: JAMM 252

JAMM 458 Public Relations Research and Analytics (3 credits)

Research techniques used by public relations practitioners, including online data analytics.

Prereqs: JAMM 252

JAMM 466 Media Campaign Strategy (3 credits)

Advanced strategies in creative approaches and media usage for Public Relations and Advertising; focuses on the development of a complete campaign for a client.

Prereqs: JAMM 350 or JAMM 367 and senior standing.

JAMM 468 Advanced Media Design (3 credits)

Advanced principles and theories of visual communication across multiple channels; working in creative teams; presenting original concepts, copywriting, design and layout; emphasis on finished portfolios.

Prereqs: JAMM 267

JAMM 469 Advertising Competition Team (3 credits, max 6)

This course provides students with an opportunity to participate in the annual National Student Advertising Competition (NSAC) sponsored by the American Advertising Federation, as well as other student competitions in advertising or integrated marketing communication.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Junior/Senior standing and Permission

JAMM 473 Cinematography and Lighting (3 credits)

Advanced skills in cinematography, including lighting styles and techniques, through hands-on experience, practical application, and analysis. Criticism, revision, problem solving and troubleshooting are emphasized. Typically Offered: Spring.

Prereqs: JAMM 374

JAMM 477 Documentary Film and TV (3 credits)

Exploration of histories, theories, and production processes for documentary film and television. Typically Offered: unknown.

Prereqs: JAMM 275

JAMM 478 Broadcast Management (3 credits)

Program development, production, theory, and scheduling; electronic media management, sales, and marketing; content development and distribution; ethical decision making and critical analysis in audience analysis and content distribution; regulations and strategies involved in radio, television, cable, online, and social media programming.

Prereqs: JAMM 275 and JAMM 322

JAMM 490 Issues in Global Media (3 credits)

General Education: International

Examines different concepts of international media; models of international content flow; cross-cultural mass media, and comparisons of media systems and audiences. Typically Offered: Varies.

Prereqs: Junior standing

JAMM 491 Multimedia Storytelling Abroad (3 credits)

Covers foundational media skills in photography, audio, video, social media, and content management, using an organized international travel experience as the inspiration for each student's media production.

Prereqs: Permission

JAMM 497 Practicum in Teaching (1-3 credits, max 3)

Supervised experience in assisting in teaching of JAMM courses.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Upper-class standing and Permission

JAMM 498 (s) Internship (1-3 credits, max 6)

Supervised experience in professional media outlet, non-profit organization, government agency, or educational institution. Graded P/F.

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and Junior standing; and JAMM 225, JAMM 252, JAMM 265, or JAMM 275; or Permission of Instructor

JAMM 499 (s) Directed Study (1-16 credits)

Credit arranged,

Prereqs: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better

JAMM 510 Emerging Media and Society (3 credits)

Examines emerging mass media in contemporary society: history and structure of modern media organizations; the political, economic and social context of media; social and cultural approaches to emerging mass media research. Typically Offered: Fall.

JAMM 520 Social Media and Analytics (3 credits)

Advanced understanding and analysis of the metric effect of social media and how they impact consumer and audience behavior, strategic communication campaign effectiveness and the return on investment (ROI) of social media in an overall media plan. Students gain practical experience in social media management strategies and techniques. Typically Offered: Fall.

JAMM 530 (s) Trends in Media Law (3 credits)

An in-depth examination of the trends affecting the legal structure within which emerging and social media operate, and the statutory and case law through which this structure has evolved. Students read cases involving digital and social media, analyze texts and discuss the implication of law from theoretical and practical perspectives. Typically Offered: Spring.

JAMM 535 Media Entrepreneurship (3 credits)

Examines the skills needed to build a media business or organization through entrepreneurship and innovation. Prepares students to envision, prototype and launch media enterprises by integrating multimedia production, social media distribution, design thinking, data collection and analysis, and audience engagement strategies. Typically Offered: Spring.

JAMM 540 Media Planning & Strategy (3 credits)

Examines the skills needed in media planning through the strategic selection of a combination of media buying to maximize the best returns to paid media. Students learn how to create a successful media plan, develop an initial media purchase and analyze the continued optimization of performance throughout the campaign's life cycle. Typically Offered: Fall.

JAMM 545 Audience Engagement (3 credits)

Using audience analytics to discover audiences, measure successful engagement, derive insight and broaden reach. Examines how to conceptualize stories with the audience in mind and the importance of audience considerations to drive media practitioners' decision making. Typically Offered: Spring.

JAMM 560 Writing and Editing for Emerging Media (3 credits)

Advanced principles of writing and editing for emerging media. Students develop skills in researching and collecting information, writing and editing for informational, entertainment and persuasive purposes to audiences accessing stories in digital, mobile and social platforms. Typically Offered: Fall.

JAMM 565 Media Production & Design (3 credits)

Advanced audio and video production techniques and aesthetics. Students write, produce, direct, and revise complex audio-video projects. Includes considerations in pre-production planning and post-production with a focus on managing media production processes. Typically Offered: Spring.

JAMM 570 Storytelling & Development (3 credits)

Examines the pre-production processes in digital audio and video productions, including screenwriting, storyboarding, and previsualizations techniques. Students learn how to develop a budget and schedule, assemble a technical crew and talent, scout locations and secure appropriate equipment for media productions. Typically Offered: Fall.

JAMM 575 Media Postproduction and Distribution (3 credits)

Advanced skills in audio and video post-production processes, roles, aesthetics, and techniques. Students learn to effectively edit video and audio into creative and cohesive works and explore strategies for distribution to artistic and commercial markets. Typically Offered: Spring.

Landscape Architecture (LARC)

LARC 150 Landscape, Culture and the Environment (3 credits)

An interdisciplinary look at how societies have shaped their environments and how the landscape shapes them. The course provides an introduction to the profession of Landscape Architecture with relevant projects, which exhibit the importance of utilizing land through attractive and efficient design. It includes discussion of contemporary issues such as urban resilience in a time of climate change, as well as reflection on historical landscape and cultures.

LARC 151 Introduction to the Built Environment (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Cross-listed with ARCH 151

Introduction to the complexities and wonders of the built environment, and the role of the humanities in successful designs. From the regional landscapes to urban design and architecture, to the intimacy of interiors and dwellings, to place making and space making, student perspectives are broadened on how the built environment is shaped by and contributes to an evolving human story. The built environment is also examined as a product of a multitude of forces that include: place, climate, conservation, culture, economics, beliefs, and aspirations for well-being. Typically Offered: Fall.

LARC 154 Landscape Architecture Representation and Media 1 (3 credits)

Drawing and graphic techniques traditional to the practice of landscape architecture and design thinking; emphasis on conceptual and analytical graphics, plan section/elevation, perspective illustration and color rendering; introduction to digital technology presentation tools. (Spring only)

LARC 200 (s) Seminar (1-16 credits)

Credit arranged

LARC 203 (s) Workshop (1-16 credits)

Credit arranged

LARC 204 (s) Special Topics (1-16 credits)

Credit arranged

LARC 210 Landscape Architecture Representation and Media 2 (3 credits)

Exploration of the digital technology tools used by design professionals throughout the design process; emphasis on digital tools that assist with the conceptualization and implementation of site design with an introduction to related landscape architecture specific tools. Typically Offered: Fall.

LARC 251 Introduction to Principles of Site Design (3 credits)

An overview of site analysis, design, and planning principles addressing the theoretical foundations, emerging cultural practices as well as the technical and functional standards for sustainable landscape architectural site design. Includes a lab section for discussion, critique and presentation of additional technical issues and site-related design projects; field trips and special sessions may be required. (Fall only)

LARC 252 Landscape Architecture Design Foundations Studio (6 credits)

Introduction to principles of landscape architectural design. Emphasizes the relationships between elements of functional, aesthetic, environmental, and socio-cultural systems, developing a foundational understanding of principles of organization, structure, and functional relationships of those systems. Students develop novice level skill and knowledge in design concept-generation; form generation; design representation; and design theory and criticism. Includes development of visual and graphic representation skills. Recommended preparation: LARC 150.

Prereqs: Landscape Architecture major, Landscape Architecture minor, or Permission

Coreqs: LARC 251

LARC 253 Landscape Architecture Design Process Studio (6 credits)

Introduction to principles of landscape architectural design process for site design. Emphasizes primary and iterative design processes and intermediate level of graphic and verbal communication. Incorporates principles of programming, landscape analysis, design synthesis, form-giving, and spatial composition. Studio projects based on site ecology, inventory/analysis, socio-cultural factors, and artistic principles of design.

Prereqs: LARC 252; Landscape Architecture major, Landscape Architecture minor, or Permission

LARC 254 Origins of Landscape Form (2 credits)

An overview of the principles and theory of form generation demonstrating the relationship between world-view, historic epoch, science and technology and the creation of form relevant to landscape architecture and other design professions. Summer reading list provided. (Spring only)

Prereqs: ART 121

LARC 288 Plant Materials & Design 1 (3 credits)

Joint-listed with LARC 488

Plant identification and selection; the sustainable use of plant materials in relation to soils, topography, and climate; introduction to the principles in relation to planting design. Selected field trips at student expense. (Fall only)

LARC 289 Plant Materials & Design 2 (3 credits)

Joint-listed with LARC 489

Continuation of plant material identification with emphasis on planting design at different scales of the landscape. Exploration of sustainable principles and practices of planting design. Two lectures and 4 hours of lab per week; selected field trips at student expense. (Spring only)

Prereqs: LARC 288

LARC 298 (s) Internship (1-16 credits)

Credit arranged

LARC 299 (s) Directed Study (1-16 credits)

Credit arranged

LARC 310 Landscape Architecture Representation and Media 3 (3 credits)

Advanced digital technology tools used by landscape architects throughout the design process; emphasis on digital modeling tools that assist with the conceptualization and development of site design and design detail. Further exploration of digital media to assist with the communication and presentation of design process and concepts. Open to Landscape Architecture majors only. Additional project required for graduate credit. (Fall only)

Prereqs: LARC 154, LARC 210, and major in Landscape Architecture; non-majors by permission as space permits

LARC 340 Grading, Drainage, and Stormwater Management (4 credits)

Joint-listed with LARC 440

Site grading, drainage and stormwater management design with a focus on siting building elevations and grading open space, green infrastructure, roads, parking, walkways, paved public spaces, cut and fill and horizontal road layout. Sustainable storm water design, grading of swales, calculating runoff and the sizing conveyance and detention basins. Recommended Preparation: MATH 143.

Prereqs: Landscape Architecture major, Landscape Architecture minor, or Permission

LARC 341 Construction Materials, Detailing, and Documentation (4 credits)

Joint-listed with LARC 441

Introduction to designing and detailing materials in the landscape. Examines the content and purpose of construction documents, the construction sequence, and properties of common landscape construction materials as they relate to aesthetics, the articulation of place, durability, and performance in outdoor environments. Focus on building a unified set of construction details and document set. Sustainable approaches, practices, and research reports support the work in detailing the materials and completion of the construction document package. Recommended Preparation: LARC 210, LARC 340.

Prereqs: Landscape Architecture major, Landscape Architecture minor, or permission

LARC 353 Landscape Architecture Studio 1 (3 credits)

Studies and applications in landscape architecture site design process at the small to intermediate site scale with an emphasis on critical thinking within the local and regional context; includes readings, lectures and field trips. Recommended Preparation: LARC 210, LARC 251, and LARC 253.

Typically Offered: Fall.

Coreqs: LARC 355

LARC 355 Landscape Architecture Studio 2 (3 credits)

Continued application and exploration of design process with a focus on the significance of site inventory and analysis, design programming and the creation of a conceptual framework to guide the design process. Typically Offered: Fall.

Coreqs: LARC 353 or Permission

LARC 358 Professional Practice (2 credits)

Introduction to aspects of professional practice in Landscape Architecture, including: professional ethics and legal obligations, licensure, business structure and planning, office organization, fees, contracts, insurance, and professional relationships.

LARC 363 Landscape Architecture Studio 3 (3 credits)

Exploration of design principles, process, conceptualization, spatial understanding, and craft via narrative; within a cultural, social, and environmental context; and application to creative thinking and decision-making required of site-specific projects. Required field trips and attendance at outside events (lectures, symposiums, films). Course offered first half of semester. Additional project required for graduate credit. Recommended Preparation: LARC 154, LARC 210, and LARC 288. (Spring only) Typically Offered: Spring.

LARC 364 Summer Study Abroad Design Studio (6 credits)

Joint-listed with LARC 564

Intermediate site scale planning and design with an emphasis on bioregional context, sustainable development and the cultural landscape as influencing site design factors. A summer abroad studio that may be substituted for LARC 353 and LARC 355, or LARC 363 and LARC 365.

Recommended Preparation: ART 110 and ART 121. (Summer only)

Prereqs: LARC 151, LARC 154, LARC 210 and LARC 288

Coreqs: LARC 382 and LARC 390

LARC 365 Landscape Architecture Studio 4 (3 credits)

Further integration and application of design process explored in LARC 363 via outreach project(s). Focus on sustainable design development. Required field trips and attendance at outside events (lectures, symposiums, films). Course offered second half of semester. Recommended Preparation: LARC 154, LARC 210, and LARC 288. (Spring only) Typically Offered: Spring.

LARC 380 Water Conservation Technologies (3 credits)

Sustainable irrigation best practices; principles of water conservation and water harvesting in landscape architecture site design with the production of a number of drawings and projects at different scales. Recommended Preparation: LARC 210. (Spring only)

LARC 382 Landscape, Language and Culture (2 credits)

Students study the Italian language, utilizing the regional, historic landscape of southern Piedmont and the markets, museums, and cultural events of Cremonino, Ovada, and Aqi Termi as a resource for enhancing language skills. (Summer only)

Coreqs: LARC 364 and LARC 390

LARC 389 History of Landscape Architecture (3 credits)

An overview of the history of landscape design with a focus on pre-Egyptian civilization through Ancient Greece and Rome, the Middle Ages, the Renaissance, the influence of Asian culture, the birth of landscape architecture, modernism, and a contemporary focus of practice. (Spring only) Cooperative: open to WSU degree-seeking students.

LARC 390 Italian Hill Towns and Urban Centers (3 credits)

General Education: International

Joint-listed with LARC 491

A summer lecture and field experience course exploring the historical foundations of community and urban pattern utilizing Italian hill towns and urban centers as a resource. Students study the organic and formal relationships between landscape and human settlement as well as the relationship between urban form and political and historical context.

Recommended Preparation: ART 100, ART 111, and LARC 389. (Summer only)

Prereqs: LARC 154

Coreqs: LARC 364 and LARC 382

LARC 395 GIS Applications for Landscape Planning (4 credits)

Introduction to theory and application of geographic information systems (GIS) analytical and modeling tools to landscape architecture and land planning issues. Includes development of intermediate level of skill in utilizing spatial and landscape analysis tools, and communication of results. Lecture with 3 hours of lab per week.

Prereqs: LARC 210 or Permission

LARC 400 (s) Seminar (1-16 credits)

Credit arranged

LARC 403 (s) Workshop (1-16 credits)

Credit arranged

LARC 404 (s) Special Topics (1-16 credits)

Credit arranged

LARC 440 Grading, Drainage, and Stormwater Management (4 credits)

Joint-listed with LARC 340

Site grading, drainage and stormwater management design with a focus on siting building elevations and grading open space, green infrastructure, roads, parking, walkways, paved public spaces, cut and fill and horizontal road layout. Sustainable storm water design, grading of swales, calculating runoff and the sizing conveyance and detention basins. Recommended Preparation: MATH 143.

LARC 441 Construction Materials, Detailing, and Documentation (4 credits)

Joint-listed with LARC 341

Introduction to designing and detailing materials in the landscape. Examines the content and purpose of construction documents, the construction sequence, and properties of common landscape construction materials as they relate to aesthetics, the articulation of place, durability, and performance in outdoor environments. Focus on building a unified set of construction details and document set. Sustainable approaches, practices, and research reports support the work in detailing the materials and completion of the construction document package. Recommended Preparation: LARC 210, LARC 340.

LARC 453 Landscape Architecture Studio 5 (3 credits)

Intermediate scale site planning through integrated studio engagement at the community and urban scale of landscape architecture with a focus on the integration of open space systems in community design. Opportunity to collaborate with students and faculty from allied professional programs. Course offered first half of fall semester. Recommended Preparation: LARC 288, LARC 289, and LARC 389. (Fall only)

Prereqs: LARC 365 or Permission

Coreqs: LARC 455 or Permission

LARC 455 Landscape Architecture Studio 6 (3 credits)

Continued emphasis on community design with a focus on master planning and design development that explores different models of human settlement and patterns of cultural, environmental and social elements. Selected field trips at student expense. Course offered second half of fall semester. Additional project required for graduate credit. Recommended Preparation: LARC 288, LARC 289, and LARC 389. (Fall only)

Coreqs: LARC 453 or Permission

LARC 463 Landscape Architecture Studio 7 (3 credits)

Intermediate scale sustainable land planning and design for the urban and rural environment with a focus on the integration of wetland ecology planning, storm water management and wildlife habitat. Course offered first half of spring semester. Selected field trips at student expense. Recommended Preparation: LARC 288 and LARC 289. (Spring only)

Prereqs: LARC 395, LARC 455, or Permission

Coreqs: LARC 465 or Permission

LARC 465 Landscape Architecture Studio 8 (3 credits)

Intermediate scale land planning and design that emphasizes sustainable development with a focus on landscape restoration and regeneration, visual analysis of the landscape matrix using GIS digital technologies and the use of indigenous plant materials for restoration and rehabilitation.

Required Field Trip at student expense. Course offered second half of spring semester. Additional project required for graduate credit.

Recommended Preparation: LARC 288 and LARC 289. (Spring only)

Prereqs or Coreqs: LARC 463 or Permission

LARC 480 The Resilient Landscape (3 credits)

General Education: Senior Experience

A capstone course addressing the concept of trade-offs in coupled social ecological technological systems, where landscapes and the communities they support are adaptive and evolving but the ideal is rarely attainable. This is a reading, critical thinking and discussion course with assessment based on class participation in a term project, problem solving, verbal and written communication, collegiality, and collaboration (Spring only).

LARC 481 Urban Systems in Ecology (3 credits)

This course is designed to introduce upper division students of Landscape Architecture and other related disciplines to the principles, theories and processes of urbanism with a focus on sustainability and the integration of natural systems both as metaphor and physical design process.

LARC 488 Plant Materials and Design 1 (3 credits)

Joint-listed with LARC 288

Plant identification and selection; the sustainable use of plant materials in relation to soils, topography, and climate; introduction to the principles in relation to planting design. Selected field trips at student expense. (Fall only)

LARC 489 Plant Materials and Design 2 (3 credits)

Joint-listed with LARC 289

Continuation of plant material identification with emphasis on planting design at different scales of the landscape. Exploration of sustainable principles and practices of planting design. Two lectures and 4 hours of lab per week; selected field trips at student expense. (Spring only)

LARC 491 Italian Hill Towns and Urban Centers (3 credits)

General Education: International

Joint-listed with LARC 390

Gen Ed: International A summer lecture and field experience course exploring the historical foundations of community and urban pattern utilizing Italian hill towns and urban centers as a resource. Students study the organic and formal relationships between landscape and human settlement as well as the relationship between urban form and political and historical context. Recommended Preparation: ART 100, ART 111, and LARC 389. (Summer only)

Prereqs: LARC 154

Coreqs: LARC 364 and LARC 382

LARC 495 Geodesign (3 credits)

Introduction to topics in geodesign with advanced application of geographic information system (GIS) analytical and modeling tools to interdisciplinary landscape change issues. Includes exploration of advanced protocols for communication of results through iterative and evaluative methods.

Prereqs: LARC 395 or Permission

LARC 498 (s) Internship (1-16 credits)

Credit arranged

LARC 499 (s) Directed Study (1-16 credits)

Credit arranged

LARC 500 Master's Research and Thesis (1-16 credits)

Credit arranged

LARC 501 (s) Seminar (1-16 credits)

Credit arranged

LARC 502 (s) Directed Study (1-16 credits)

Credit arranged

LARC 503 (s) Workshop (1-16 credits)

Credit arranged

LARC 504 (s) Special Topics (1-16 credits)

Credit arranged

LARC 510 Advanced Design Representation and Communication (3 credits)

Theory and evaluation of design representation utilizing digital tools, modeling, and traditional methods to communicate landscape architectural design principles within social and ecological contexts. Typically Offered: Spring.

Prereqs: LARC 210 or equivalent, non-majors by permission as space permits

LARC 512 Landscape Analysis and Site Planning (3 credits)

Integrated systems approach to inventory and analysis of biological, physical, social, behavioral, and cultural elements of the landscape. Development of analysis tools, processes, design programming, data sources, and manipulation as applied to landscape architectural design and landscape planning. Typically Offered: Fall.

LARC 520 Regional and Community Design (3 credits)

This course examines contemporary issues of urban and regional planning and design through focus on a particular project, generally in partnership with a local community or agency. It complements the integrated fall studio (LARC 554), utilizing thematic readings, case studies, and GIS-based geodesign methods applied to urban and regional design and planning. Particular emphasis is placed on: theory and methods in community design and planning; analytical methods and modeling; case study method in design; and data-driven design.

Prereqs: Admission to M. Arch. , M. L. A. or M. S. Bioregional Planning program

LARC 548 Community Design Studio for Non-majors (3 credits)

This studio is an introductory landscape planning and urban design studio for students in the Urban Design Certificate program that are not in the professional M. Arch. or MLA programs. Students will work with students in the LARC 554 studio on urban design problems of regional and district scales. This course emphasizes understanding and analyzing regional human and natural systems within the context of urban development and landscape change. Students do not need a background in design to participate in the studio. This course may meet with LARC 554.

Prereqs: Graduate standing or permission

LARC 554 Landscape Architecture Graduate Studio 1 (6 credits)

The professional landscape architecture comprehensive studio with options to study on campus or elsewhere in collaboration with students from allied professions. Attendance at outside events, lectures, symposiums, films may be required. (Fall only)

Prereqs: Graduate standing, LARC 465; or Permission

LARC 555 Master's Project Preparation (3 credits)

This course guides students through the process of identifying a specific project, and developing a proposal, scope and timeline for their Masters Project or thesis. Students will prepare a research report to support their Masters Project or thesis, utilizing literature review and case study research methods. Students are also introduced to other common methods of original research utilized in the discipline and develop a framework for their own research. Progress is reviewed in regular peer presentations, giving students practice in developing professional level graphic and verbal communication skills.

LARC 556 Landscape Architecture Graduate Studio 2 (6 credits)

The professional landscape architecture comprehensive studio with options to study on campus or elsewhere in collaboration with students from allied professions. Attendance at outside events, lectures, symposiums, films may be required. (Spring only)

Prereqs: Graduate standing, LARC 465, and LARC 554; or Permission

LARC 558 Landscape Architecture Graduate Studio 3 (6 credits)

Graduate final project with faculty advisor.

Prereqs: Graduate standing and LARC 556; or Permission

LARC 562 Landscape Architecture Graduate Studio 4 (6 credits)

Graduate final project with faculty advisor.

Prereqs: Graduate standing and LARC 558; or Permission

LARC 564 Summer Study Abroad Design Studio (6 credits)

Joint-listed with LARC 364

Intermediate site scale planning and design with an emphasis on bioregional context, sustainable development and the cultural landscape as influencing site design factors. A summer abroad studio that may be substituted for LARC 353 and LARC 355, or LARC 363 and LARC 365.

Recommended Preparation: ART 110 and ART 121. (Summer only)

Coreqs: LARC 382 and LARC 390

LARC 589 History and Theory of Landscape Architecture (3 credits)

An examination of landscape architecture from a historic and contemporary perspective as reflected in theory and practice. This course focuses on the development of landscape as a result of environmental and cultural influences. Typically Offered: Spring.

LARC 597 Teaching Assistant, Graduate (3 credits, max 6)

Teaching assistant services performed by advanced graduate students with faculty supervision. By permission only.

LARC 598 (s) Internship (1-16 credits)

Credit arranged

LARC 599 Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Latin American Studies (LAS)

LAS 200 (s) Seminar (1-16 credits)

Credit arranged

LAS 203 (s) Workshop (1-16 credits)

Credit arranged

LAS 204 (s) Special Topics (1-16 credits)

Credit arranged

LAS 299 (s) Directed Study (1-16 credits)

Credit arranged

LAS 306 Culture and Institutions of Latin America (3 credits)

General Education: International

Cross-listed with SPAN 306

General Education: International. Typically Offered: Varies.

Prereqs: SPAN 302 or Permission

LAS 391 Hispanic Film (3 credits)

General Education: International

Cross-listed with FLEN 391

Open to all students. A maximum of 3 cr in FLEN 391 and FLEN 394 may be counted toward a major in Spanish. Genre, structure, and style of representative fiction and nonfiction films of Spain and Latin America. Typically Offered: Varies.

LAS 394 Latin American Literature in Translation (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

A maximum of in FLEN 391 and FLEN 394 may be counted toward a major in Spanish. Major Spanish-language authors in English translation; knowledge of Spanish is not required.

LAS 400 (s) Seminar (1-16 credits)

Credit arranged

LAS 403 (s) Workshop (1-16 credits)

Credit arranged

LAS 404 (s) Special Topics (1-16 credits)

Credit arranged

LAS 409 Modern Latin American Society (3 credits)

General Education: International

Cross-listed with SPAN 409

Analysis of contemporary issues in Latin American society such as gender, race, environment, and immigration from a variety of cultural perspectives (film, newspapers, literature, etc.). Typically Offered: Varies.

Prereqs: SPAN 306 or LAS 306

LAS 413 Spanish American Short Fiction (3 credits)

General Education: International

Cross-listed with SPAN 413

The short story in 19th- and 20th-century Spanish America. Typically Offered: Fall.

Prereqs: SPAN 302

LAS 422 Mexican Culture through Cinema (3 credits)

General Education: International

Cross-listed with SPAN 422

Examines how fictional representations of Mexico are driven by specific historical, political, economic, and cultural forces. Students will also reflect on the ways in which films and literature can inform our knowledge of race, gender and socio-economic relations and how these representations of Mexican culture through film have changed over time. Typically Offered: Spring.

Prereqs or Coreqs: SPAN 306 or LAS 306

LAS 438 Modern Mexico and the Americas (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Cross-listed with HIST 438

Joint-listed with HIST 538

Survey and analysis of political, economic, social, and cultural aspects from independence to present; emphasis on Iberian and Amerindian legacies, economic development, relations with U. S. , and social revolution of 1910-1920. Additional work required for graduate level credit. Typically Offered: Varies.

LAS 439 Modern Latin America (3 credits)

General Education: International

Cross-listed with HIST 439

Gen Ed: International Political, economic, social, and cultural development; search for stability; growth of nationalism.

LAS 441 Slavery and Freedom in the Americas (3 credits)

General Education: International

Cross-listed with HIST 441

General Education: International and Social and Behavioral Ways of Knowing. Analysis of the way in which African slavery became the predominant labor force in the Americas from 16th century to 19th century. Emphasis on slave resistance and the international abolitionist movement (1760s to 1888). Typically Offered: Varies.

LAS 462 Human Issues in International Development (3 credits)

General Education: International, Social and Behavioral Ways of Knowing

Cross-listed with ANTH 462

Joint-listed with ANTH 562

Course content includes the historical and political contexts that shape development, development theories and approaches, along with the global challenges of poverty, social inequalities, and environment. Culture as an important consideration in development is emphasized. Additional projects/assignments required for graduate credit. (Alt/years)

LAS 499 (s) Directed Study (1-16 credits)

Credit arranged

Law (LAW)

LAW 4040 (s) Special Topics (1-16 credits)

Credit arranged

LAW 8050 Civil Procedure and Introduction to Law (4 credits)

Overview of U. S. legal systems, providing basics on civil litigation and legal principles. Covers litigation topics including pleadings, pretrial management, discovery, summary judgment, trial, post-trial motions, judgment, personal jurisdiction, subject matter jurisdiction and related topics with a focus on the Federal Rules of Civil Procedure. Typically Offered: Fall.

LAW 8060 Civil Procedure II (3 credits)

Continuation of LAW 8050 on the process and principles of civil litigation in the U. S.

Prereqs: LAW 8050**LAW 8070 Property (4 credits)**

This property law course is a required part of the curriculum. The course introduces students to personal and real property interests including donative transfers, estates and future interests, cotenancy, selling and financing real property, landlord and tenant, easements, public and private control of land use, as well as other basic property law concepts. Typically Offered: Fall.

LAW 8090 Torts (4 credits)

The common law providing private redress for injuries primarily to person or property. The course examines the three basic theories of tort liability: intent, negligence, and strict liability.

LAW 8120 Criminal Law (3 credits)

The sources and purposes of the criminal law; the meaning of criminal responsibility, the elements of crimes, and the administration of criminal justice.

LAW 8130 Contracts (4 credits)

Basic elements of private, consensual agreements enforced by law under common law and UCC Article 2: formation, principles of bargain or reliance, methods to police the bargain, interpretation, performance/breach and remedies for breach, defenses to liability, and the rights and liabilities of third parties upon assignment and delegation. Typically Offered: Fall.

LAW 8140 Contracts II (3 credits)

Continuation of LAW 8130 on the basic elements of private, consensual agreements enforced by law under common law and UCC Article 2.

Prereqs: LAW 8130**LAW 8150 Legal Writing & Analysis (2 credits)**

In this course, students learn communication and reasoning skills fundamental to the practice of law. Typically Offered: Fall.

LAW 8160 Constitutional Law (4 credits)

An examination of the institution of judicial review and of the constitutional divisions of government power in the United States; the principles of separation of powers and federalism; and the constitutional protection of certain individual rights and liberties, particularly under the 14th Amendment. Typically Offered: Spring.

LAW 8170 Academic Skills Lab I (1 credit)

Fundamental skills instruction designed to develop the legal analysis and writing skills needed to perform well in law school. Topics include critical reading, case briefing, course outlining, issue spotting, exam outlining, and exam writing. Graded P/F.

LAW 8180 Academic Skills Lab II (1 credit)

Intensive instruction focused on enhancing students' skills by written and oral exercises in case reading, briefing, analyzing, synthesizing, note taking, outlining, communicating, and exam taking skills. The course also addresses study habits, time management, and stress reduction. Graded P/F.

LAW 8210 Legal Research (1 credit)

Basic elements of legal research in print and electronic resources, including generating search terms; researching secondary sources, cases, and statutes; and using citators for case research.

LAW 8250 Written and Oral Advocacy (3 credits)

Builds upon the skills learned in Legal Writing and Analysis and includes simulated client work involving persuasive writing techniques and oral advocacy. Typically Offered: Spring.

Prereqs: LAW 815**LAW 8500 First Amendment Seminar (3 credits)**

Amendment's Speech, Press, Association, Establishment, and Free Exercise Clauses, and the interrelatedness between free expression and religious freedoms. The course investigates analytical problems in First Amendment jurisprudence including philosophical foundations of free expression, free association, free exercise of religion, and the prohibition against government establishment of religion.

Prereqs: LAW 8160 and LAW 9050**LAW 8510 Advanced Torts (2-3 credits)**

Selected topics in tort law, including products liability, traditional strict liability, defamation, and business torts. Two-credit course covers fewer areas of study.

Prereqs: LAW 8090**LAW 8520 NREL Field Course (2 credits)**

Summer field course exploring the implementation of natural resource and environmental law on the ground in Idaho, focusing on the effects of state and federal resource management and protection statutes on public and private landscapes. Accelerated course.

Prereqs: Permission**LAW 8530 Education Law (3 credits)**

Issues pertaining to the history and structure of U. S. public education including religious and private school alternatives, school funding, curriculum and governance, student supervision, equal educational opportunity issues including race and disability, employment issues including collective bargaining, and students' and teachers' rights and responsibilities including free speech and due process.

LAW 8570 Introduction to American Law (3 credits)

Examination of the American legal system for foreign-trained lawyers. Topics, related to both statutory and common law, include fundamental legal concepts, key doctrinal areas of law, the American legal education system, how laws are made and function, and how law evolves over time.

Prereqs: Registered as L. L. M. student**LAW 8580 Advanced Criminal Procedure: Adjudications (3 credits)**

A study of the federal constitutional constraints on criminal adjudications, with a focus on the right to counsel, pretrial release, the grand jury, prosecutorial discretion, discovery obligations, guilty pleas and plea bargaining, jury trial rights, double jeopardy, and sentencing.

Prereqs or Coreqs: LAW 9530**LAW 8590 Advanced Advocacy (2 credits)**

A simulation course focusing on advanced persuasive writing techniques and oral advocacy skills.

Prereqs: LAW 8150

LAW 8600 Applied Legal Reasoning (3 credits)

Training in the analytical, writing, and organizational skills needed to efficiently analyze legal questions under time pressure and prepare for the bar exam. Using 2–3 doctrinal subjects, students apply critical reading, issue spotting, organizational, and writing skills to multiple-choice, essay, and performance problems. Open only to students in their last year of law school. Graded P/F.

LAW 8610 Civil Rights Litigation (3 credits)

In Civil Rights Litigation, students develop a basic understanding of claims, defenses and remedies available in 42 U. S. C. § 1983 actions, including claims brought against the police and prisons. Students will also be introduced to employment, disability and housing discrimination. They will be able to identify and evaluate litigation and alternative dispute resolution strategy, from both a plaintiff's and defendant's perspective.

Prereqs: LAW 8160

LAW 8620 Arbitration Law (3 credits)

An examination of the basics of contract enforcement through the method of arbitration. Determining arbitrability, standards for interpreting contract language, strikes, discipline and discharge, drug testing, pre- and post-contract grievances as well as U. S. Supreme Court cases affecting arbitration, are among the many subjects the students will explore. Classes will include a review of a fact pattern taken from an actual labor contract with students asked to comment on the potential arbitration issues raised by same. In addition, students will participate in a mock arbitration hearing as the arbitrator and either as corporate or union counsel. A student's accomplishment of these outcomes will be assessed by means of an arbitration brief and decision, self-assessment paper, and participation in arbitration hearings. Arbitration Law satisfies the experiential learning requirement. Typically Offered: Fall (Even Years).

LAW 8630 Death Penalty Seminar (3 credits)

Focuses on the doctrinal evolution of modern capital punishment jurisprudence, with a special emphasis on the Eighth, Fourteenth, and Sixth Amendments. The seminar will cover specific themes such as death qualification and jury selection; race and the imposition of the death penalty; narratives of life and death in capital trials and the role of aggravating and mitigating evidence; the right to counsel; the execution of juveniles, the intellectually disabled, and the mentally ill; the constitutional dimensions of innocence; the constitutionality of lethal injection and other methods of execution; and the political and moral debate about capital punishment. Typically Offered: Varies.

LAW 8640 Election Law (2-3 credits)

Offers a survey of contemporary issues in American election law. Topics may include the right to vote and judicial review of voter eligibility requirements; felon disenfranchisement; the electoral college; reapportionment, redistricting and racial and partisan gerrymandering; campaign finance; the Voting Rights Act; the regulation of political parties and party primaries; ballot access; direct democracy; and electoral administration. Typically Offered: Varies.

LAW 8960 Agriculture Law (3 credits)

This course is aimed at students whose practice could include representing farmers, ranchers, the agencies that regulate them, or the businesses with which they deal (e. g. , grain elevators, banks, meat packing companies), and students who might be involved in ag law policy. It is a survey course, designed to introduce students to the many ways that the law treats these farmers and ranchers distinctively. Typically Offered: Spring (Even Years).

LAW 8970 Family Justice Clinic (3-6 credits, max 12)

Students represent survivors of domestic and sexual violence in civil proceedings primarily involving Civil Protection Orders. Clinic students also assist with divorce, custody, termination of parental rights, adoption, minor guardianship, and contempt proceedings. Course provides experiential learning credit.

Prereqs: LAW 9500, LAW 9620, LAW 9710 and permission. Prereqs or LAW 9580 or LAW 9540 recommended. LAW 9630 recommended.

Coreqs: LAW 9680

LAW 9010 (s) Seminar (1-16 credits)

Credit arranged. See the Class Schedule for specific topics.

LAW 9012 Civil Mediation (2 credits)

Credit may not be earned in both LAW 9120 and LAW 9130. A study of conflict resolution, negotiation, and mediation theory, process, and skills. Exploration of each stage of the mediation process and attendant strategies and skills. Offered through the Northwest Institute for Dispute Resolution. Accelerated course. Graded P/F.

Prereqs: Permission

LAW 9030 Introduction to Intellectual Property (3 credits)

Introduction to the four substantive areas of intellectual property: trade secrets, trademarks, copyrights, and patents, with an emphasis on the tension in each body of law between private rights and the public's interest.

LAW 9040 Federal Courts (3 credits)

The constitutional structure and the practical role of the federal court system, with great emphasis on the working relationship between federal and state courts.

LAW 9050 Constitutional Law II (3 credits)

Study of individual rights and liberties protected by the Constitution. This course will introduce students to substantive due process, the equal protection clause, and foundational principles of freedom of speech, freedom of religion, and the separation of church and state. Typically Offered: Fall.

LAW 9070 Administrative Law (3 credits)

An examination of the constitutional limits on administrative agencies, the procedural requirements for agency decision making, and judicial review of agency actions. The focus is on federal administrative law.

LAW 9080 Workplace Law (4 credits)

Survey course covering state common law exceptions to the employment at will doctrine, federal anti-discrimination statutes, federal statutory protection of collective activity, and other state and federal law governing the employment relationship; exploration of the processes of hiring, firing, and setting the terms and conditions of employment.

LAW 9090 Energy Law (3 credits)

Energy Law is the study of how we power our lives. We will study the law and policy of coal, oil, natural gas, nuclear power, electricity, wind, solar, and other renewables. We will cover laws related to mining. We will learn about the carbon credits system and we will discuss utility companies. We will also cover the technology behind the sources of energy. The course will cover pollution and clean air. We will discuss climate change. We will discuss cryptocurrency and the energy use to mine it. We will use readings from the textbook which will be informed and supplemented with other articles and readings. Students will be graded on a class presentation, class participation, and your choice of either taking a final exam or writing a paper on a topic of your choosing. Typically Offered: Fall (Odd Years).

LAW 9100 Antitrust (3 credits)

Study of the application of the antitrust law to cooperation among competitors, agreements between suppliers and customers regarding the resale of products, exclusive dealing arrangements, monopolization, and mergers.

LAW 9120 Civil Mediation (2 credits)

Credit may not be earned in both LAW 9120 and LAW 9130. A study of conflict resolution, negotiation, and mediation theory, process, and skills. Exploration of each stage of the mediation process and attendant strategies and skills. Offered through the Northwest Institute for Dispute Resolution. Accelerated course. Graded P/F.

Prereqs: Permission

LAW 9130 Family Mediation (2 credits)

Credit may not be earned in both LAW 9120 and LAW 9130. A skills-based study of family mediation designed for those wishing to mediate or represent clients in the mediation process. Topics covered include structuring the mediation process, guidelines for division of assets, construction of parenting plans, and ethical concerns. Offered through the Northwest Institute for Dispute Resolution. Accelerated course. Graded P/F.

LAW 9160 Public Interntl Law (3 credits)

Survey of major areas of the law of nations and international organizations.

LAW 9170 Negotiation and Appropriate Dispute Resolution (3 credits)

Simulation and seminar style instruction in negotiation techniques, mediation and arbitration, focusing on skill development and legal and ethical issues frequently faced by lawyers.

LAW 9180 Internet Law (2-3 credits)

Introduction to the legal and policy challenges presented by commerce and communication on the Internet. Topics include Internet governance, sovereignty and jurisdiction, free speech, privacy and surveillance, and the protection of intellectual property. Two-credit course covers fewer areas of study.

LAW 9190 Business Associations (4 credits)

Agency, partnerships, corporations, and other types of business organizations; limitations on powers and authority of partners, corporate officers, and directors.

LAW 9200 Securities Regulation (3 credits)

The law of corporate finance under the Securities Act of 1933 and the Securities Exchange Act of 1934.

LAW 9210 Accounting for Lawyers (2 credits)

Examination of basic accounting principles designed as background for the tax and business law courses for those students without accounting and business experience and intended to make the lawyer conversant with accountants.

LAW 9220 Trademarks and Unfair Competition (2-3 credits)

Trademarks include words, symbols, colors, pictures, packaging and product design by which businesses identify themselves and their products and services. Trademark rights as they exist in the U. S. today stem from common law principles of unfair competition in business. This course examines the validity of rights claimed in trademarks, including what conduct infringes these rights, and examines the current scope of these rights in view of their historical unfair competition roots. Typically Offered: Spring (Odd Years).

LAW 9230 Payment Systems (2-3 credits)

The study of paper-based and other methods of payment under state and federal law with primary focus on the law of negotiable instruments under Article 3 of the Uniform Commercial Code, Bank Deposits and Collections, and Electronic Funds Transfers under Articles 4 and 4A of the UCC and Federal Reserve Board Regulations J and CC and related federal statutes.

LAW 9240 Sales (3 credits)

The study of the law relating to the sale of goods under Article 2 of the Uniform Commercial Code and related statutes and treaties, including introduction to the structure, purposes, and policies of the Uniform Commercial Code.

LAW 9250 Property Security (3 credits)

Overview of the law relating to secured credit including the mechanisms for creating enforceable security and mortgage interests in real and personal property.

LAW 9260 Bankruptcy (3 credits)

Federal bankruptcy law, the collective forum for resolving the rights of financially distressed debtors and their creditors, emphasizing basic principles applicable to all filings, liquidation, or rehabilitation of consumer debtors, and the pervasive effect of bankruptcy on everything from family law to business transactions and relationships.

LAW 9270 Business Entities Taxation (2-3 credits)

Introduction to the federal income tax treatment of corporations, partnerships, limited liability companies, and their owners. The course will explore the tax consequences that occur throughout an business entity's life cycle, including formation, business operations, and termination.

Prereqs: LAW 9300

LAW 9280 Tribal Nation Economics & Law (3 credits)

Survey of economic development strategies by various Tribal Nations, including an overview of federal incentive programs and disincentives for the growth of strong tribal economies. Tribal legal codes, commercial projects, and federal Indian law parameters will be discussed. Topics will include: the tribal government-owned corporate model, gaming enterprises, economic diversification, the federal 8(a) program, limitations on tribal tax-exempt bond offerings, and value-added on-reservation products. LAW 9280 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 478 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course. (Spring, alt/years)

LAW 9300 Taxation I (3-4 credits)

Income and deductions, accounting methods, transactions resulting in capital gain, deferral of tax, and choice of the taxable person; introduction to tax procedure and to income taxation of trusts, estates, and partnerships.

LAW 9310 Patents and Law Practice (2-3 credits)

This course will examine the law and policy underlying the U. S. patent system, with a focus on the legal means for obtaining, challenging, and enforcing patent rights. A technical background is not required, but a willingness to engage with some technical aspects of patentable subject matter is. Typically Offered: Spring (Even Years).

LAW 9320 Estate Planning (3 credits)

Inter vivos, testate, and intestate disposition of property with emphasis upon estate and gift tax impact and consideration of the law of future interests.

LAW 9330 State Debtor-Creditor Law (2 credits)

Study of the legal mechanisms for enforcing judgments, and the rights and protections of debtors and creditors as a matter of state law.

LAW 9340 Land-Use Law and Planning (3 credits)

This course addresses the regulation of private lands by state and local governments; will investigate social and cultural agreements about land as influenced by and institutionalized in Constitutional protections, state statutory regimes and local programs; and will develop a working knowledge of the general legal principles, and policy and planning issues relevant to private land management. Enrollment limited to 25 students.

LAW 9370 Wildlife Law and Policy (3 credits, max 3)

An examination of state and federal law applicable to wildlife. (Spring, alt/ yrs)

LAW 9380 Intl Environ & Water Law (3 credits)

An examination of international environmental law and the law of international water courses. (Spring only)

LAW 9390 Law, Science, & Environment (2 credits)

The use of science in the courtroom and in agency decision making, with emphasis on natural resources and environmental law. This course will explore both the process and substantive areas of selected areas of science and the law. Recommended Preparation: LAW 9070. (Spring, alt/ years)

LAW 9400 International Human Rights (3 credits)

An overview of international rights and humanitarian law and advocacy, including a focus on particular topics of timely interest determined by the instructor and students.

LAW 9410 Wills Estates & Trusts (3 credits)

Intestate succession, wills, and administration of estates in probate.

LAW 9420 Water Law of the American West (3 credits)

The basics of water allocation law with a focus on western water law. Study of the development of the common law of water allocation and of comprehensive statutory systems including the implementation of water law through administrative agencies and water rights adjudication. Typically Offered: Fall.

LAW 9440 State and Local Government Law (3 credits)

Review of the source, scope, and limits of local government power, with reference to Idaho and other state examples. The course will consider the relationship of local governments to the state and federal government, as well as to neighboring communities and individuals.

LAW 9450 Community Property (2 credits)

Special problems that arise in connection with the community property system in the western states.

LAW 9470 Environmental Law (3 credits)

Environmental planning and protection, regulation of air and water pollution, waste disposal, use of pesticides and other toxic chemicals, and remedies for environmental injury. Cooperative: open to WSU degree-seeking students.

LAW 9480 Public Lands and Resources Law (3 credits)

This course examines the natural resource allocation and management systems applicable to the public lands, including the Federal Land Policy and Management Act, National Forest Management Act, Mineral Leasing Act, Wilderness Act, and other relevant federal statutes.

LAW 9490 Native American Law (3 credits)

Study of Tribal Sovereignty and interaction with the U. S. government at various levels with an emphasis on treaty rights, jurisdictional issues, the trust relationship, protection of lands, the eras of U. S. Indian policy, and the continued assertion of tribal rights and interests. LAW 9490 is a law class and will be graded based on the norms and expectations to which law students are normally held. AIST 420 is an undergraduate course that will be assessed on a P/F basis according to the general norms and expectations for an upper division undergraduate course.

LAW 9500 Evidence (3 credits)

The law governing the presentation of proof in Idaho and federal courts.

LAW 9520 Remedies (3 credits)

Consideration of legal and equitable relief available to aggrieved parties in contractual or other relationships.

LAW 9530 Criminal Procedure: Investigations (3 credits)

A study of the federal constitutional constraints on criminal investigations, with a focus on searches and seizures, arrests, interrogations, identification procedures, and the right to counsel.

LAW 9540 Trial Skills (3 credits)

Credit cannot be earned in both LAW 9540 and LAW 9580. Instruction in the skills fundamental to litigation and the techniques of persuasive witness examination and argument, combining classroom instruction and individually critiqued student exercises. Limited enrollment.

Prereqs: LAW 9500 and Permission

LAW 9550 Appellate Advocacy Program (2 credits)

A brief-writing and oral advocacy course run as the McNichols Moot Court competition. Students attend class once a week for the first six weeks of the semester, write a two-issue appellate brief, and make a minimum of two oral arguments. Accelerated course. Graded P/NP; credits earned are not class hours.

LAW 9560 Moot Court (1,2 credits)

Preparation of appellate briefs and argument of cases orally in regional or national competition; grading and evaluating briefs of students participating in second-year appellate advocacy program (with approval of the faculty advisor of the second-year appellate advocacy program); the faculty supervisor of each competition is the final arbiter of the number of credits awarded within the guidelines. Graded P/F; credits earned are not class hours. Only those students who will complete all the activities for their appellate moot court program (including attending the competition) by the end of fall semester may register for credits in the fall semester; all other students eligible for credits under this course register in the spring. Graded P/F; credits earned are not class hours. Limited enrollment.

LAW 9570 Mock Trial (2 credits)

Participation as an attorney on a mock trial team in regional or national competition; the faculty supervisor of each competition is the final arbiter of the credits awarded within the guidelines.

Prereqs: LAW 9540 or LAW 9580 or Permission

LAW 9580 Trial Advocacy (2 credits)

Credit cannot be earned in both LAW 9540 and LAW 9580. An intensive seven-day course offered the week before classes regularly begin in the fall. The course follows the National Institute of Trial Advocacy Training format of faculty demonstration, discussion, student performance, and critique, culminating in a mock jury trial on the last day of the training. Limited enrollment. Graded P/F.

Prereqs: LAW 9500 and Permission; Limited to third-year law students unless waived by the Director of Clinical Programs

LAW 9590 Critical Legal Studies (2-3 credits, max 3)

Critical Studies focuses on deconstructing traditional hierarchies within the law and legal institutions and looks to foster change by critically analyzing the law and these institutions. This course will cover one or more of the following subjects: Feminism, Critical Race Studies, Race-Feminism, Gender/Gender Identity/Queer Studies. course covers more areas of study.

LAW 9600 Conflict Of Laws (2-3 credits)

A study of the principles for deciding which law applies to incidents and transactions crossing state lines and of the constitutional limitations on a state's rights to impose its own law in suits arising out of such incidents and transactions; enforcement of foreign judgments, the jurisdiction of courts, and the special jurisdictional problems in domestic relations cases.

LAW 9610 Jurisprudence (2 credits)

Consideration of the various views and philosophies of law as expressed in classical and contemporary writings; methods of legal analysis, the relationship between law and justice, between law and power, and between law and truth.

LAW 9620 Professional Responsibility (3 credits)

Consideration of the various views and philosophies of law as expressed in classical and contemporary writings; methods of legal analysis, the relationship between law and justice, between law and power, and between law and truth.

LAW 9630 Family Law (3 credits)

Legal problems of the family, including marriage, annulment, adoption, and divorce.

LAW 9640 Children and the Law (2-3 credits)

Examines the legal status of children, including topics such as the parent-child relationship, guardianship, representation of children, neglect, and adoption. Two-credit course covers fewer areas of study.

LAW 9650 Elder Law (2-3 credits)

An overview of the legal regimes and practical issues that face lawyers representing older clients. Topics include Social Security, pensions, annuities, Medicare, Medicaid, health care decision-making, property management, special needs trusts, guardianships, conservatorships, elder abuse, elder housing, end of life issues, and special ethical issues for attorneys representing elder persons. Two-credit course covers fewer areas of study.

LAW 9670 Advanced Legal Writing (2 credits)

This course will focus on advanced writing concepts, including advanced study of standards of review, development of policy arguments and legislative intent analysis, writing jury instructions, drafting statutes, and drafting judicial opinions; additionally, there will be a heavy emphasis on style. As such, it is assumed that students have mastered the skills learned in Legal Research & Writing. This course does not satisfy the upper division writing requirement. Limited enrollment.

LAW 9680 Domestic Violence and the Law (2-3 credits, max 3)

This seminar will cover the legal system's response to the problem of domestic violence and to a lesser extent, stalking and sexual assault. Students will explore both civil and criminal avenues of redress. Existing shortcomings of those responses, and proposed reforms, will be examined. The course will address how domestic violence is treated in a variety of legal contexts, including in relation to child abuse, custody, visitation, mediation, parent education at divorce, relocation, child abduction, and torts.

LAW 9700 Advanced Legal Research (2 credits)

An advanced course covering all forms of materials, in all formats (print, microformat, electronic), available for conducting legal research.

LAW 9710 Lawyering Process Seminar (2 credits)

Client representation skills, with an emphasis on pre-trial civil litigation; classroom and simulation instruction in interviewing, counseling and negotiating skills, pleading, discovery, and motion practice. Limited enrollment.

LAW 9730 Field Placement - Independent Study (1-5 credits, max 12)

Students perform legal work in selected public service positions under the supervision of experienced judges and lawyers. Students will complete reading and writing assignments under faculty supervision. Credits earned are not classroom credits. Typically Offered: Fall and Spring.

Prereqs: Permission

LAW 9740 Legal Aid Clinic (3-6 credits, max 12)

From time to time, specific legal aid clinics may be offered. The content of such clinics is announced in advance of the semester in which they are offered. Course provides experiential learning credit.

Prereqs: LAW 9620; and Permission; and qualification for limited license as legal intern in Idaho

LAW 9750 Field Placement-Public Service (1-5 credits, max 12)

Students perform legal work in selected public service positions under the supervision of experienced judges and lawyers. Students must attend periodic classes. Credits earned are not classroom credits. Typically Offered: Summer.

Prereqs: Permission

LAW 9760 Semester in Practice (1-12 credits, max 12)

Students perform legal work in the public or private sector under the supervision of a field supervisor. Open only to students in their last year of law school. Students attend periodic classes focused on professional growth and formation, ethics, and reflecting on the transition to practice. Graded pass/fail. Credits earned are not classroom credits. Graded Pass/Fail. Typically Offered: Fall and Spring.

Prereqs: Permission

LAW 9770 Clinical Lab (1 credit, max 4)

One-credit lab courses providing clinical experience for interested upper-division students. The labs, designed to allow students to obtain practical experience in conjunction with upper-division substantive courses, labs are supervised by experienced practitioners. Graded P/F.

LAW 9780 Entrepreneurship Law Clinic (3-6 credits, max 12)

Real-life experience handling transactional legal problems and assisting businesses and not-for-profits. Course provides experiential learning credit.

Prereqs: LAW 9190 and LAW 9620; and LAW 9660, LAW 9670, or LAW 9710; and Permission; and qualification for limited license as legal intern in Idaho

LAW 9790 Native American Natural Resource Law (3 credits)

Study of the natural resources over which Tribal Nations assert stewardship or seek to influence others regarding protection of resources including sacred sites, land use and environmental protection, natural resource development, taxation, water rights, rights associated with hunting, fishing and gathering, and international approaches to indigenous lands and resources. Recommended Preparation: LAW 9490.

LAW 9800 Copyrights (2-3 credits)

A survey of U. S. domestic copyright law, focusing on current provisions of the Copyright Act of 1976, as amended, and leading cases interpreting those provisions. Particular attention is paid to policy challenges created by the Internet and by the increasing internationalization of copyright law. Two-credit course covers fewer areas of study.

LAW 9810 Critical Legal Studies Journal (1-4 credits, max 4)

Participation in the student edited Crit Law Journal. Credit awarded upon approval of the editor-in-chief and faculty advisor. Graded pass-fail; credits earned are not classroom credit hours.

Prereqs: Acceptance to the Crit Journal

LAW 9820 Law Review (1-4 credits, max 4)

Graded P/F; credits earned are not class hours. The awarding of credit is subject to approval by the editor-in-chief and faculty advisor.

LAW 9830 Directed Study (1-2 credits, max 4)

Individual research on a significant legal problem and the writing of a paper thereon that must be approved by the faculty member under whose direction the work is done. Graded P/F; credits earned are not class hours.

LAW 9840 Real Estate Transactions (2-3 credits)

Aspects of the standard commercial real estate purchase transaction, including real estate contracts, title issues, construction, default, financing, leasing, and structuring real estate development transactions. Two-credit course covers fewer areas of study.

LAW 9850 Immigration Law and Policy (3 credits)

The rights and limitations relating to various types of immigration status, different kinds of visas, admission and removal procedures, grounds of inadmissibility and deportation, and defenses.

LAW 9860 Judicial Clerkship Seminar (1-2 credits)

Seminar focusing on advanced writing concepts within the judicial context, with instruction on common types of legal writing practiced by judicial clerks.

Prereqs: Permission

LAW 9870 Law Practice Management (1-2 credits)

Topics in the business of law practice, including accepting and billing clients, managing case files and client trust accounts, making business arrangements, and managing human, physical, and financial resources. Graded Pass/No Pass. Two-credit course covers more areas of study. Course provides experiential learning credit.

LAW 9890 Mass Media Law (2 credits)

Seminar addressing legal issues in new technologies and the rapidly changing mass-media environment. Topics are generally organized around a single theme, such as First Amendment law and theory, privacy or Freedom of Information Act issues, commercial speech regulation, and media and the electoral process.

LAW 9910 Skill Practicum (1-16 credits)

From time to time, specific skills courses are arranged and made available for a semester. The exact content of each skills course is announced in advance of the semester in which it is offered.

LAW 9920 White Collar Crime (2-3 credits)

Federal law prohibiting financial, non-violent crime, including fraud, racketeering, and bribery. The course examines principles of statutory interpretation, grand jury investigations, parallel civil proceedings, corporate and individual responsibility, sentencing guidelines, and federal-state coordination.

LAW 9950 Community Law Clinic (3-6 credits, max 12)

Representing clients in proceedings primarily involving family law issues including divorce, custody, termination of parental rights, adoption, and contempt proceedings. Clinic students also advocate for victims in domestic violence protection order hearings, defend clients in criminal misdemeanor cases, and represent clients in consumer protection matters, landlord-tenant disputes, and probate actions. Course provides experiential learning credit.

Prereqs: LAW 9500, LAW 9620, and LAW 9710; and permission; and qualification for limited license as legal intern in Idaho. LAW 9630 recommended.

Coreqs: LAW 9580

LAW 9960 Immigration Clinic (3-6 credits, max 12)

Represent immigrant clients in administrative applications, immigration court cases, federal litigation, and appeals, including in the Ninth Circuit. Advise community members on immigration issues. A seminar provides students an opportunity to study the substantive law and lawyering skills needed for their work and to reflect on it. Course provides experiential learning credit. It's recommended that LAW 9710 and 9580 are taken previously or concurrently.

Prereqs: LAW 9500, LAW 9620, and LAW 9850 or permission; and permission; and qualification for limited license as legal intern in Idaho.

LAW 9970 Mediation Clinic (1-6 credits, max 9)

Legal aid clinic in which legal interns provide mediation services and hone their skills in communication, facilitation, negotiation, organization, and ethics.

Prereqs: LAW 9120 or LAW 9130; and LAW 9500, LAW 9620, and LAW 9710; and permission; and qualification for limited license as legal intern in Idaho

LAW 9980 Tax Clinic (2-6 credits, max 9)

Representation of low-income taxpayers in disputes with the IRS at the audit, appeals, collection, and Tax Court levels. Students are exposed to the Boise tax community through frequent practitioner guest lecturers, an IRS field trip, and by attending Tax Court calendars, and they are required to complete a community outreach project. Recommended Preparation: LAW 9270, LAW 9500, and LAW 9580.

Prereqs: LAW 9300, LAW 9620, and LAW 9710; and permission; and qualification for limited license as legal intern in Idaho

LAW 9990 (s) Study Abroad/Off Campus (1-18 credits)

Credit arranged. Graded P/F.

Library Science (LIBS)

LIBS 404 (s) Special Topics (1-16 credits)

Credit arranged

LIBS 410 Libraries and their Collection: Materials Selection (3 credits)

Joint-listed with LIBS 510

Introduction to library science theory and practice with emphasis on material selection and evaluation. Research project and paper required for graduate credit.

LIBS 413 Computer Applications in Libraries (3 credits)

Theory and practice of current models of library automation, focusing on choosing, evaluating, and implementing technological tools and services for school and public libraries.

Prereqs: LIBS 410 or LIBS 510

Coreqs: LIBS 414 and LIBS 418

LIBS 414 Reference and Information Services (3 credits)

Joint-listed with LIBS 514

Introduction to theory and practice of reference and information services, with emphasis on material selection, evaluation, and evaluation for school and public libraries as well as professional standards and rubrics. Research project and paper required for graduate credit.

Prereqs: LIBS 410**Coreqs:** LIBS 413 and LIBS 418**LIBS 418 Classification and Cataloging (3 credits)**

Joint-listed with LIBS 518

Organization of library materials, principles of cataloging, subject analysis, classification, bibliographic methods, Dewey decimal system. Research project and paper required for graduate credit.

Prereqs: LIBS 410**Coreqs:** LIBS 413 and LIBS 414**LIBS 425 School Library Administration, Leadership, and Management (3 credits)**

Joint-listed with LIBS 525

This course explores the organization of school libraries with an emphasis on effective management and leadership. Research project and paper required for graduate credit.

Prereqs or Coreqs: LIBS 433**LIBS 427 Library and Media Center Practicum (3 credits)**

Practice experience as a teacher-librarian under professional supervision for the purpose of obtaining an endorsement. Ninety hours of supervised experience per credit.

Prereqs: 15 credits of Library Science courses; and Department and Site Permission**Prereqs or Coreqs:** LIBS 425**LIBS 430 Children's Literature for Teacher Librarian (3 credits)**

This course will develop students' basic knowledge and understanding of the field of children's literature, particularly as it pertains to teacher librarians, with a focus on children ages 2-12. This course will emphasize skills, tools, and insights necessary for effective professional librarianship in the area of services to children.

Prereqs: LIBS 413 and LIBS 414 and LIBS 418; or Permission**Coreqs:** LIBS 433**LIBS 431 Adolescent Literature for Teacher Librarians (3 credits)**

This course will develop students' knowledge of adolescent literature as it pertains to Teacher Librarians, with a focus on youth grades 6-12. It emphasizes the skills and discernment necessary by the Teacher Librarian to effectively serve adolescents. Evaluation tools for selecting literature and electronic resources will be covered, and issues relating to materials selection and promotion for the secondary school library will be explored.

Prereqs: LIBS 413 and LIBS 414 and LIBS 418; or Permission**Coreqs:** LIBS 433**LIBS 433 Information Literacy for the Teacher Librarian (3 credits)**

Explores the role of the Teacher Librarian in providing information literacy instruction. Defines information literacy, as well as places it in a national, state and local framework. The research process as it correlates with information literacy and relevant educational theory is covered.

Prereqs or Coreqs: LIBS 430 or LIBS 431 or Permission**LIBS 504 (s) Special Topics (1-16 credits)**

Credit arranged

LIBS 510 Libraries and their Collection: Materials Selection (3 credits)

Joint-listed with LIBS 410

Introduction to library science theory and practice with emphasis on material selection and evaluation. Research project and paper required for graduate credit.

Prereqs: Instructor Permission**LIBS 514 Reference and Information Services (3 credits)**

Joint-listed with LIBS 414

Introduction to theory and practice of reference and information services, with emphasis on material selection, evaluation, and evaluation for school and public libraries as well as professional standards and rubrics. Research project and paper required for graduate credit.

Prereqs: Instructor Permission**Coreqs:** LIBS 413 and LIBS 418**LIBS 518 Classification and Cataloging (3 credits)**

Joint-listed with LIBS 418

Organization of library materials, principles of cataloging, subject analysis, classification, bibliographic methods, Dewey decimal system. Research project and paper required for graduate credit.

Prereqs: Instructor Permission**Coreqs:** LIBS 413 and LIBS 414**LIBS 525 School Library Administration, Leadership, and Management (3 credits)**

Joint-listed with LIBS 425

This course explores the organization of school libraries with an emphasis on effective management and leadership. Research project and paper required for graduate credit.

Prereqs: Instructor Permission**Prereqs or Coreqs:** LIBS 433

Management & Human Resources (MHR)

MHR 204 (s) Special Topics (1-16 credits)

Credit arranged

MHR 298 (s) Internship (1-3 credits, max 6)

Credit arranged

MHR 310 Leading Organizations and People (3 credits)

Great leaders are made, not born. This course prepares students to effectively acquire and deploy human capital, lead individuals and teams, inspire and motivate people to perform the tasks needed to achieve ambitious goals, and inspire innovation. Includes international and ethical issues. May involve evening exams and presentation practices. Typically Offered: Fall, Summer and Spring.

Prereqs: BUS 190; or Permission**MHR 311 Introduction to Management (3 credits)**

Planning, organizing resources, leadership, and control in small organizations, large businesses, family businesses and start-ups; evolution of philosophies of management, decision making, motivation, human relations, and communication; organizational behavior and theory; history and present management practices, showing interrelationships between the needs and expectations of the individual, the organization, and society. May involve evening exams. Typically Offered: Spring, Summer.

MHR 312 Applied Business Leadership (3 credits)

This course uses experiential learning to engage students in leadership-oriented experiences and focused reflection to increase their ability to apply leadership principles and practices in small businesses, large businesses, family businesses and non-profits. This course addresses practices associated with recruiting, selecting, and onboarding talent, employee engagement, mentoring, team building, conflict resolution, distributive and integrative negotiation, managing change, performance evaluation and feedback, managing meetings, and leading in hybrid and remote settings. Typically Offered: Fall and Spring.

Prereqs: MHR 310 or MHR 311

MHR 398 (s) Internship (1-3 credits, max 6)**MHR 404 (s) Special Topics (1-16 credits)**

Credit arranged

MHR 411 Acquiring Human Capital (3 credits)

An organization's ability to develop and sustain a competitive advantage through human resources begins with successfully attracting and acquiring talented and motivated human capital. This course addresses recruitment and selection practices and their theoretical underpinnings, including such topics as individual differences theories, decision-making heuristics and biases, human perception, staffing strategies, human resource planning, strategic human resource management, EEO and legal issues, job analysis and competency modeling, recruitment methods, selection techniques, and selection validation. Typically Offered: Fall, Spring.

Prereqs: MHR 310.

MHR 416 Managing Reward Systems (3 credits)

A key factor in accomplishing organizational goals is the ability to retain and motivate talented human resources. This course addresses compensation and benefits practices and their theoretical underpinnings, including such topics as motivation theories (e. g. , equity theory), learning theories, job evaluation, monetary-nonmonetary reward programs, individual, group and organizational incentives. Typically Offered: Spring.

Prereqs: MHR 310

MHR 417 Deploying and Developing Human Capital (3 credits)

Managers work with and through others to achieve organizational goals; therefore, managers must be able to assess and develop an organization's human resources. This course addresses training, development and performance management practices and their theoretical underpinnings, including such topics as motivation theories (e. g. , goal setting theory, expectancy theory), learning theories, leadership, employee orientation, needs assessment, training and development methods, evaluating training effectiveness, performance measurement, the HR Scorecard, and delivering performance feedback. Typically Offered: Fall, Spring.

Prereqs: MHR 310.

MHR 418 Managing Organization Design and Leading Changes (3 credits)

In order for an organization to develop and sustain a source of competitive advantage management must maintain a fit between an organization's strategy and its structure. This course addresses organization design and change practices that are used to integrate an organization's strategy with its people, positions, procedures, processes, culture, technology and or elements that comprise the organization and their theoretical underpinnings; including topics such as the Balanced Scorecard, open systems, organizational effectiveness, organizational technology, organization design for the global environment , power and politics, problem diagnosis, change implementation, resistance to change, the role of change agents, and changing the ethical climate. Typically Offered: Fall, Spring.

Prereqs: MHR 310 or MHR 311.

MHR 441 Maintaining Employee and Labor Relations (3 credits)

Effective employer-employee relationships contribute to successful productivity, motivation, morale and retention. This course addresses employee and labor relations practices and their theoretical underpinnings, including such topics organizational culture and climate, intergroup conflict, communication, conflict resolution, investigating and resolving complaints, unionization and collective bargaining, applying and interpreting employment and labor laws, and maintaining positive relationships. Typically Offered: Fall.

Prereqs: MHR 310 or MHR 311.

MHR 499 (s) Directed Study (1-16 credits)

Credit arranged

MHR 504 (s) Special Topics (1-16 credits)**MHR 513 Leadership and Organizational Behavior (3 credits)**

Micro-oriented treatment of areas including communication, motivation, group process, conflict, leadership style.

Management Information Systems (MIS)

MIS 204 (s) Special Topics (1-16 credits)

Credit arranged

MIS 250 Introductory Systems Development (3 credits)

Introduction to event-driven and object-oriented systems development in a graphical user interface environment; significant hands-on demonstrations and uses of a variety of integrated application development tools.

Prereqs: Must have taken at least 30 credits

MIS 298 (s) Internship (1-3 credits, max 6)**MIS 299 (s) Directed Study (1-16 credits)**

Credit arranged

MIS 350 Managing Information (3 credits)

Introduction to use and management of data to support decision making. Includes discussion of relevant international and ethical issues.

Prereqs: STAT 251 or STAT 301

MIS 353 Application Development (3 credits)

Intro to the design and implementation of IS applications. Topics may include programming for mobile and distributed systems, usability, and security.

Prereqs: Junior standing

MIS 355 Systems Analysis & Administration (3 credits)

Introduction to analysis, development, and management of modern information systems. May involve evening exams.

Prereqs: Junior standing

MIS 398 (s) Internship (1-3 credits, max 6)**MIS 404 (s) Special Topics (1-16 credits)**

Credit arranged

MIS 440 Data Visualization for Managerial Decision Making (3 credits)

Use of data analytics to improve decision making and provide visual insights for businesses to improve long term predictions and prescribe future actions.

Prereqs: MIS 350 or BUS 354 or Instructor Permission

MIS 452 Data Communications & Network Management (3 credits)

Survey of data communication management issues in a business environment; topics include local and wide area networks, public networks, and application of data communications technology in strategic business management. Typically Offered: Fall.

Prereqs: MIS 350 or MIS 353, or MIS 355

MIS 453 Database Design (3 credits)

Introduction to modern database management systems and their use in solving business problems. May involve evening exams.

Prereqs: MIS 350, MIS 353, MIS 355, or CS 120

MIS 454 Issues in Information Systems (3 credits)

Discussion of major topics of current importance in information systems.

Prereqs: MIS 350, MIS 353 or MIS 355

MIS 455 Data Management for Big Data (3 credits)

Joint-listed with MIS 555

Introduction to big data and the various data models related to managing "Big Data" and very large datasets. Emphasis will be on developing NOSQL data management systems. Additional topics may include data access, data analytics, and data visualization. Additional projects/ assignments required for graduate credit.

MIS 456 Cybersecurity Competition (1 credit, max 6)

Students will develop, practice, and validate cybersecurity skills. The skills developed from participating in the virtual labs will be used to participate in the competitions. Graded P/F.

MIS 499 (s) Directed Study (1-16 credits)

Credit arranged

MIS 555 Data Management for Big Data (3 credits)

Joint-listed with MIS 455

Introduction to big data and the various data models related to managing "Big Data" and very large datasets. Emphasis will be on developing NOSQL data management systems. Additional topics may include data access, data analytics, and data visualization. Additional projects/ assignments required for graduate credit.

Marketing (MKTG)

MKTG 204 (s) Special Topics (1-16 credits)

Credit arranged

MKTG 298 (s) Internship (1-3 credits, max 6)**MKTG 299 (s) Directed Study (1-16 credits)**

Credit arranged

MKTG 321 Marketing (3 credits)

General Education: Social and Behavioral Ways of Knowing

Explores marketing as an integrating function of the firm. Includes the study of product, price, place, and promotions in the creation of customer value, international marketing, and the roles of corporate social responsibility and ethics in marketing decision making. May involve evening exams. Typically Offered: Fall, Spring and Summer.

MKTG 324 Consumer Behavior (3 credits)

Behavioral science theories, concepts, and methods applied to the understanding and prediction of consumer behavior, including industrial buyer behavior; emphasis on structuring marketing policy to fulfill consumer requirements. May involve evening exams. Typically Offered: Fall, Spring, Summer.

Prereqs or Coreqs: MKTG 321

MKTG 398 (s) Internship (1-3 credits, max 6)**MKTG 404 (s) Special Topics (1-16 credits)**

Credit arranged

MKTG 420 Integrated Marketing Communication (3 credits)

Integrated Marketing Communications (IMC) from a marketing strategy perspective. Application of the IMC planning process and examination of the role of integration to create consistency of strategy using traditional promotion elements (advertising, public relations, sales promotion, reseller support, personal selling), and new media. May involve evening exams. Typically Offered: Fall, Spring, Summer.

Prereqs: MKTG 321.

MKTG 421 Marketing Research & Analysis (3 credits)

Applied research focusing on marketing information needs for managerial decision making; includes research design, data collection methods, statistical analysis, and use of marketing information systems to forecast market and sales potential, measure effectiveness of promotions, and analyze new products and distribution of goods and services. May involve evening exams. Typically Offered: Fall, Spring.

Prereqs: STAT 251 or STAT 301; and MKTG 321.

MKTG 422 Sales Management (3 credits)

Sales Management includes recruiting, selecting, training, compensating, motivating, supervising, and directing selling efforts. May involve evening exams. Typically Offered: Fall, Summer.

Prereqs: MKTG 321.

MKTG 423 Digital Marketing Strategy (3 credits)

Digital marketing from a marketing strategy perspective. Application of digital marketing tools toward segmentation, targeting, positioning, differentiation, and the marketing mix. Topics may include trends in digital marketing, digital media, and applications to digital marketing. Typically Offered: Fall.

Prereqs: MKTG 321

MKTG 424 Pricing Strategy and Tactics (3 credits)

Formulation of pricing strategies and tactics for new and existing products and services; survey of pricing dynamics; competitor response to pricing strategies at the firm and product level; assessment of buyer price sensitivity. Typically Offered: Fall, Spring, Summer.

Prereqs: MKTG 321, and ECON 202 or ECON 272.

MKTG 425 Retail Distribution Management (3 credits)

Analysis of retail operations including location, market selection, capital and physical requirements, store layout, merchandise management, customer relations, channel structure, and channel member relations. May involve evening exams. Typically Offered: Fall, Summer and Spring.

Prereqs: MKTG 321

MKTG 426 Marketing Channels Management (3 credits)

Analysis of planning, organization, and control issues related to distribution of goods and services; topics include retail and wholesale institutions, channel member behavior patterns, and vertical marketing systems.

Prereqs: MKTG 321

MKTG 427 Services Marketing (3 credits)

Survey of concepts addressing distinctive marketing problems and opportunities in service industries, as well as current issues and trends in the service sector; includes discussion of strategies for marketing services, emphasizing the distinctive challenges and approaches that make the marketing of services different from marketing manufactured goods. May involve evening exams. Typically Offered: Fall, Spring, Summer.

Prereqs: MKTG 321.

MKTG 428 Marketing Management (3 credits)

Discussion of major marketing management functions, including market and environmental analysis, as well as marketing planning, strategy, programs, implementation, and control concepts; special emphasis on application of such concepts by developing a marketing plan that identifies market opportunities and proposes relevant marketing programs. May involve evening exams. Typically Offered: Fall, Spring and Summer.

Prereqs: MKTG 321, MKTG 324, and MKTG 421; MKTG 420 or MKTG 422 or MKTG 423 or MKTG 424 or MKTG 425 or MKTG 426 or MKTG 427 or MKTG 482 or MKTG 495.

MKTG 431 Marketing Analytics (3 credits)

Marketing Analytics is concerned with concepts, tools, methods, and applications of modeling and decision making to address important marketing issues such as pricing, segmentation, positioning, market forecasting, new product management and development, sales force management, and promotion planning. The course is aimed at providing students with analytic and interpretive skills needed to make intelligent and critical use of marketing data. Typically Offered: Spring.

Prereqs: MKTG 421 or STAT 431.

MKTG 432 Advanced Sales Management (3 credits)

Advanced sales management is concerned with building upon sales management principles, discussion of advanced topics, and application of concepts. Topics will include managing and leading a professional B2B sales team, the application of customer relationship management (CRM) systems, evaluating sales performance, motivating and rewarding members of the sales force, and modeling and analytic techniques to support sales management efforts. Typically Offered: Spring.

Prereqs: MKTG 321 and MKTG 422

MKTG 482 International Marketing (3 credits)

Foreign market operations; economic, cultural, and political aspects of international markets and how they interact with the marketing mix.

Prereqs: MKTG 321

MKTG 495 Product Development and Brand Management (3 credits)

General Education: Senior Experience

Cross-listed with FSP 495

This course examines product development strategy and the management of brands. Topics will include strategic intent of product development, the process of product development (ideation through post product launch evaluation), market and financial feasibility of product development, trends in product development, and managing brands (strategic brand management and managing brand equity). Typically Offered: Fall, Spring and Summer.

Prereqs: ECON 201, ECON 202, or ECON 272; and MKTG 321.

Coreqs: MKTG 321

MKTG 498 (s) Internship (1-16 credits)**MKTG 499 (s) Directed Study (1-16 credits)**

Credit arranged

MKTG 504 (s) Special Topics (1-16 credits)

Materials Science & Engr (MSE)

MSE 101 Introduction to Metallurgy and Materials Science (2 credits)

Earth resources, metallurgy, materials science, and manufacturing. (Fall only)

MSE 201 Elements of Materials Science (3 credits)

Principles relating properties of metals, ceramics, polymers, and composites to their structures.

Prereqs: CHEM 111, CHEM 111L

MSE 204 (s) Special Topics (1-16 credits)

Credit arranged

MSE 299 (s) Directed Study (1-16 credits)

Credit arranged

MSE 308 Thermodynamics of Materials (3 credits)

First, second, and third laws of thermodynamics. Reaction equilibria. Phase diagrams. Thermodynamics of metallic and ceramic materials.

Prereqs: MSE 201 and CHEM 112, CHEM 112L.

Coreqs: MATH 310

MSE 313 Physical Metallurgy (3 credits)

Theory, structure, and properties of materials. (Fall only)

Prereqs: MSE 201

MSE 313L Physical Metallurgy Laboratory (1 credit)

Metallographic principles and practices, hardness testing, structure-property correlations. One 2-hour lab per week.

Prereqs or Coreqs: MSE 313

MSE 340 Transport and Rate Processes I (4 credits)

Cross-listed with CHE 340

Transport phenomena involving momentum, energy, and mass with applications to process equipment design. Coordinated lecture-lab periods.

Prereqs: ENGR 335, MATH 310, and CHE 223 or MSE 201

MSE 393 Materials Engineering Projects (1-3 credits, max 9)

Problems of a research exploratory nature.

Prereqs: Permission

MSE 400 (s) Seminar (1-16 credits)

Credit arranged

MSE 404 (s) Special Topics (1-16 credits)

Credit arranged

MSE 412 Mechanical Behavior of Materials (3 credits)

Theories of elasticity and plasticity, dislocation based plastic deformation, strengthening mechanisms, mechanical properties of solids and relevant testing methods, failure processes and theories, fracture mechanics. Coordinated lecture-lab periods.

Prereqs: MSE 201 and Junior standing; or Permission

MSE 413 Phase Transformation and Kinetics (3 credits)

Joint-listed with MSE 513

Free energy minimization algorithms. Construction of phase diagrams for liquid and solid systems. Reaction kinetics in liquid and solid systems. Determination of reaction kinetics parameters (reaction order, activation energy, reaction rate constants, etc.). Coordinated lecture-lab periods. Additional projects/assignments required for graduate credit.

Prereqs: CHEM 112, CHEM 112L

MSE 415 Materials Selection and Design (3 credits)

Selection of materials for use in structural applications; consideration of environment, stress conditions, cost, and performance as guide to properties; optimization of choice of materials and fabrication methods; open-ended problems of real applications in various industries. Recommended Preparation: MSE 313 and MSE 456. (Spring only)

Prereqs: MSE 201 and ENGR 350

MSE 417 Instrumental Analysis (3 credits)

Principles and laboratory experiments in x-ray diffraction, scanning electron microscopy, transmission electron microscopy, thermal analysis, etc. (Fall only)

Prereqs: Junior/Senior standing in an engineering discipline

MSE 423 Corrosion (3 credits)

Joint-listed with MSE 523

Engineering aspects of corrosion and its control presented in ways of importance to a practicing engineer. Topics include corrosion economics, detecting and monitoring corrosion, regulations, specifications, safety. Emphasis on corrosion monitoring and corrosion fundamentals: chemical and electrochemical reactions; chemical and electrochemical equilibria-including Pourbaix diagrams; electrochemical kinetics. Selection and use of materials, from stainless steels to plastics. Failure analysis. Additional projects/assignments required for graduate credit. (Fall only)

Prereqs: CHEM 112, CHEM 112L and MSE 201 or CHE 223; or Permission

MSE 427 Ceramics Materials (3 credits)

Joint-listed with MSE 527

Crystallography, ceramic crystal structures, phase diagrams, phase transformation; mechanical properties, thermal properties, electrical and magnetic properties. Additional projects/assignments required for graduate credit. Recommended Preparation: MSE 313.

MSE 432 Fundamentals of Thin Film Fabrication (3 credits)

Physical deposition, chemical deposition, post deposition process, film characterization, and film properties. (Spring only)

Prereqs: Senior standing or Permission

MSE 434 Fundamentals of Polymeric Materials (3 credits)

Polymer structure/property relationships and engineering applications. Topics include: overview of polymer chemistry and physics as they inform structure and properties for real-world applications, including sustainability considerations. Coordinated lecture-lab periods.

Prereqs: CHEM 111, CHEM 111L and CHEM 112, CHEM 112L

MSE 437 Radiation Effects on Materials (3 credits)

Joint-listed with MSE 537

Interactions between radiation and solids.

Prereqs: MSE 201 or Permission.

MSE 438 Fundamentals of Nuclear Materials (3 credits)

Cross-listed with NE 438

Joint-listed with MSE 538 and NE 538

This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Term-projects and advanced problems required for graduate credit. (Spring only)

Prereqs: MSE 201 or NE 450; or Permission

MSE 453 Process Analysis & Design I (3 credits)

Cross-listed with CHE 453

Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. CHE 453 and CHE 454/MSE 453 and MSE 454 are to be taken in sequence. (Fall only)

Prereqs: CHE 330, CHE 341, and CHE 423; or MSE 201, MSE 308, MSE 313, MSE 340, and MSE 412

MSE 454 Process Analysis and Design II (3 credits)

General Education: Senior Experience

Cross-listed with CHE 454

Estimation of equipment and total plant costs, annual costs, profitability decisions, optimization; design of equipment, alternate process systems and economics, case studies of selected processes. CHE 453 and CHE 454 are to be taken in sequence. (Spring only)

Prereqs: CHE 453 or MSE 453

MSE 456 Metallic Materials (3 credits)

Processes for extracting metals; various classes of metallic alloys; casting, powder metallurgy, mechanical working, and joining of metals. Emphasis on understanding relationship of processing, structure and properties. Some lab demonstration of metal fabrication processes included.

Prereqs: MSE 313 or Permission

MSE 498 (s) Internship (1-16 credits)

Credit arranged

MSE 499 (s) Directed Study (1-16 credits)

Credit arranged

MSE 500 Master's Research and Thesis (1-16 credits)

Credit arranged

MSE 501 (s) Seminar (1-16 credits)

Credit arranged

MSE 502 (s) Directed Study (1-16 credits)

Credit arranged

MSE 504 (s) Special Topics (1-16 credits)

Credit arranged

MSE 507 Microstructures and Defects (3 credits)

This course correlates microstructure and defects with mechanical, physical and chemical properties of engineering materials. The fundamental characteristics of point, line, surface and volume defects in crystals will be elucidated on an advanced level. The essential elements of microstructure and their role in engineering materials will be discussed.

Prereqs: Graduate standing or Permission

MSE 512 Nuclear Components Inspection (3 credits)

Cross-listed with NE 512

This course will cover various non-destructive testing techniques to evaluate the environmental degradation of the nuclear structural components. Remnant life estimation of structural components exposed to fatigue, creep and stress corrosion cracking service conditions will be discussed.

Prereqs: Graduate standing or Permission

MSE 517 Reaction Kinetics (3 credits)

Application of absolute reaction rate theory; time and temperature dependence; kinetics of gas-solid reactions; kinetics of solid-solid reactions; corrosion, diffusion, and recrystallization.

Prereqs: Materials Science Engineering graduate student or Permission

MSE 523 Corrosion (3 credits)

Joint-listed with MSE 423

Engineering aspects of corrosion and its control presented in ways of importance to a practicing engineer. Topics include corrosion economics, detecting and monitoring corrosion, regulations, specifications, safety. Emphasis on corrosion monitoring and corrosion fundamentals: chemical and electrochemical reactions; chemical and electrochemical equilibria-including Pourbaix diagrams; electrochemical kinetics. Selection and use of materials, from stainless steels to plastics. Failure analysis. Additional projects/assignments required for graduate credit. (Fall only)

Prereqs: CHEM 112, CHEM 112L and MSE 201 or CHE 223; or Permission

MSE 525 Electronic Materials (3 credits)

Study of major chemical and physical principles affecting properties of solid state engineering materials. Topics include bonding, carrier statistics, band-gap engineering, optical and transport properties, novel materials systems, characterization, magnetism, and comprehensive introduction to physics of solid state devices.

Prereqs: Materials Science Engineering graduate student or Permission

MSE 527 Ceramic Materials (3 credits)

Joint-listed with MSE 427

Crystallography, ceramic crystal structures, phase diagrams, phase transformation; mechanical properties, thermal properties, electrical and magnetic properties. Additional projects/assignments required for graduate credit. Recommended Preparation: MSE 313.

MSE 537 Radiation Effects on Materials (3 credits)

Cross-listed with NE 537

Joint-listed with MSE 437

Interactions between radiation and solids.

Prereqs: MSE 201 or Permission.

MSE 538 Fundamentals of Nuclear Materials (3 credits)

Cross-listed with NE 538

Joint-listed with MSE 438 and NE 438

This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Term-projects and advanced problems required for graduate credit. (Spring only)

Prereqs: MSE 201 or NE 450; or Permission

MSE 585 Nuclear Fuel Cycles (3 credits)

Cross-listed with NE 585

Processes to support the existing LWR fuel cycle. Alternative fuel cycles including U-233, Pu239 and mixed oxide fuels, and advanced reactor concepts. Recycling and recovery of nuclear materials, with emphasis on traditional fast reactor recycle. Typically Offered: Fall.

Prereqs: Permission

MSE 598 (s) Internship (1-16 credits)

Credit arranged

MSE 599 (s) Research (1-16 credits)

Credit arranged

MSE 600 Doctoral Research & Dissertation (1-45 credits)

Credit arranged

Mathematics (MATH)

Vertically-related courses in this subject field are: MATH 170 - MATH 175 - MATH 275 - MATH 471 - MATH 472.

Credit Limitations: MATH 108 carries no credit after MATH 143; MATH 143 carries no credit after MATH 160 or MATH 170; MATH 170 carries 2 credits after MATH 160; MATH 160 carries no credit after MATH 170, MATH 215 carries no credit after MATH 461 or MATH 471.

MATH 108 Intermediate Algebra (3 credits)

Carries no credit after MATH 143. Review of algebra including factoring, rational expressions, exponents, radicals, quadratic equations, equations of lines. Taught using the Polya Math Center, a studio environment featuring group study, one-to-one interaction with instructors, computer-mediated modules, and lectures. Does not satisfy general education requirement.

MATH 123 Math in Modern Society (3 credits)

General Education: Mathematical Ways of Knowing

Discussion of some aspects of mathematical thought through the study of problems taken from areas such as logic, political science, management science, geometry, probability, and combinatorics; discussion of historical development and topics discovered in the past 100 years.

MATH 143 College Algebra (3 credits)

General Education: Mathematical Ways of Knowing

Carries no credit after MATH 160 or MATH 170. Algebraic, exponential, logarithmic functions; graphs of conics; zeros of polynomials; systems of equations, induction. Taught using the Polya Math Center, a studio environment featuring group study, one-to-one interaction with instructors, computer-mediated modules, and lectures.

Prereqs: Sufficient score on SAT, ACT, or math placement test; or MATH 108 with grade of C or better. It is recommended that MATH 143 be taken within two years of passing MATH 108 or its equivalent. Required test scores can be found here: <http://www.uidaho.edu/registrar/registration/placement>

MATH 144 Analytic Trigonometry (1 credit)

Not open for credit to students who have previous high school or college credit in trigonometry. Trigonometric functions, inverse functions, applications. Taught using the Polya Math Center, a studio environment featuring group study, one-to-one interaction with instructors, computer-mediated modules, and lectures.

Prereqs: Sufficient score on SAT, ACT, or math placement test. Students may qualify by enrolling concurrently in MATH 143 or MATH 170. Required test scores can be found here: <http://www.uidaho.edu/registrar/registration/placement>.

MATH 153 Introduction to Statistical Reasoning (3 credits)

General Education: Mathematical Ways of Knowing

Cross-listed with STAT 153

A course in statistical literacy, an introduction with emphasis on examples and case studies. Topics include data sources and the distinction between experiments, observational studies, and surveys; graphical and numerical description of data; understanding randomness; central tendency; correlation versus causation; line of best fit; estimation of proportions; and statistical testing.

MATH 160 Survey of Calculus (4 credits)

General Education: Mathematical Ways of Knowing

Carries no credit after MATH 170. Overview of functions, and graphs, derivatives, integrals, exponential and logarithmic functions, functions of several variables, and differential equations. Primarily for students who need only one semester of calculus, such as students in business or architecture. Typically Offered: Fall, Spring and Summer.

Prereqs: Sufficient score on SAT, ACT, or math placement test, or MATH 143 with a 'C' or better. Required test scores can be found here: <http://www.uidaho.edu/registrar/registration/placement>.

MATH 170 Calculus I (4 credits)

General Education: Mathematical Ways of Knowing

Carries 2 credits after MATH 160. Functions, limits, continuity, differentiation, integration, applications, differentiation and integration of transcendental functions. Primarily for students in engineering, mathematics, science or computer science. Typically Offered: Fall, Spring and Summer.

Prereqs: MATH 143 (with a grade of 'C' or better) and MATH 144 (concurrent enrollment in MATH 144 is allowed although it is recommended that students complete MATH 144 before enrolling in MATH 170); or demonstrated proficiency through a sufficiently high score on the ACT, SAT, or math placement test. Required test scores can be found here: <http://www.uidaho.edu/registrar/registration/placement>.

MATH 175 Calculus II (4 credits)

General Education: Mathematical Ways of Knowing

Differentiation and integration of transcendental functions, integration techniques, general mean value theorem, numerical techniques, and series. Typically Offered: Fall, Spring and Summer.

Prereqs: MATH 170 with a grade of 'C' or better

MATH 176 Discrete Mathematics (3 credits)

Induction, set theory, graph theory, number systems, Boolean algebra, and elementary counting.

Prereqs: MATH 143 or sufficiently high score on SAT, ACT, or math placement test. Required test scores can be found here: <http://www.uidaho.edu/registrar/registration/placement>.

MATH 183 Introduction to Data Science in Python (3 credits)

The purpose of this course is to introduce fundamental skills in data science such as data manipulation, data visualization, and tabular data analysis, as well as the basic usage of Python and Python techniques to perform such skills. Relevant mathematical topics such as basic linear algebra and basic statistics will also be introduced as required.

Prereqs: MATH 160 or MATH 170

MATH 204 (s) Special Topics (1-16 credits)

Credit arranged

MATH 215 Proof via Number Theory (3 credits)

An introduction to mathematical thinking and proof through the development of the basic results of elementary number theory. Emphasis on techniques of mathematical proofs, reading and writing proofs, and fundamental mathematical structures.

Prereqs: MATH 175 and MATH 176

MATH 275 Calculus III (3 credits)

General Education: Mathematical Ways of Knowing

Vectors, functions of several variables, and multiple integration.

Prereqs: MATH 175

MATH 299 (s) Directed Study (1-16 credits)

Credit arranged

MATH 310 Ordinary Differential Equations (3 credits)

Classification, initial and boundary value problems of one variable, exact equations, methods of solving higher-order linear equations, second-order equations with constant coefficient, series solutions, systems of linear equations, Laplace transforms, and existence theorems. Recommended preparation: MATH 275.

Prereqs: MATH 175

MATH 315 HON: Topics in Pure Mathematics (3 credits)

A topic selected each year that develops skill and appreciation for theoretical nature of mathematics.

Prereqs: Permission of director of University Honors Program

MATH 330 Linear Algebra (3 credits)

Linear equations, matrices, linear transformations, eigenvalues, diagonalization; applications. Recommended Preparation: MATH 175.

Prereqs: MATH 160 or MATH 170

MATH 371 Mathematical Physics (3 credits)

Cross-listed with PHYS 371

Mathematical techniques needed in upper-division physics courses, including vector analysis, matrices, Sturm-Liouville problems, special functions, partial differential equations, complex variables. Typically Offered: Fall (Even Years).

Prereqs: PHYS 212 and MATH 275

MATH 376 Discrete Mathematics II (3 credits)

Selected topics from discrete mathematics such as graph theory, modeling, and optimization. Recommended for Computer Science majors.

Prereqs: MATH 176 or Permission

MATH 385 Theory of Computation (3 credits)

Cross-listed with CS 385

Mathematical models of computation, including finite automata and Turing machines. (Fall only)

Prereqs: Permission

MATH 386 Theory of Numbers (3 credits)

Second course on number theory, including a historical treatment of efforts to answer basic questions on the density and possible forms of prime numbers. Topics may include: quadratic reciprocity, cubic reciprocity, quadratic forms, genus theory, higher reciprocity laws, Hilbert class field, the prime number theorem, Dirichlet's theorem on primes in an arithmetic progression, elliptic curves, and modular forms.

Prereqs: MATH 215

MATH 388 History of Mathematics (3 credits)

History of the development of mathematical ideas from ancient cultures to the present, including the relationship of those ideas to the cultures that produced them as well as an understanding of the mathematics involved. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 175 or Permission

MATH 390 Axiomatic Geometry (3 credits)

Development of Euclidean and hyperbolic geometry using the axiomatic approach. Recommended Preparation: MATH 215.

Prereqs: High school geometry and MATH 176, or Instructor Permission

MATH 391 Modern Geometry (3 credits)

Euclidean and non-Euclidean geometries, plus topics chosen from projective, transformational, and computational geometry. Recommended Preparation: MATH 215.

Prereqs: High School Geometry and MATH 176, or Instructor Permission

MATH 395 Analysis of Algorithms (3 credits)

Cross-listed with CS 395

Measures of efficiency; standard methods and examples in the design, implementation, and analysis of algorithms. (Spring only)

Prereqs: MATH 175 and CS 121

MATH 400 (s) Seminar (1-16 credits)

Credit arranged

MATH 404 (s) Special Topics (1-16 credits)

Credit arranged

MATH 415 Cryptography (3 credits)

General Education: Senior Experience

Congruences, modular arithmetic, private-key cryptosystems, public-key cryptosystems, and applications. The role of modern mathematics in information age society.

Prereqs: MATH 330

MATH 420 Complex Variables (3 credits)

Complex numbers, elementary functions, derivatives, the residue theorem, conformal mappings, contour integration, infinite series, applications.

Prereqs: MATH 275

MATH 426 Discrete Optimization (3 credits)

Optimization on graphs, networks and flows, and related topics.

Recommended Preparation: MATH 175.

MATH 427 Transformational Geometry (3 credits)

Geometry concepts of congruence, parallelism, and similarity using rigid motions; the group structure of the collection of isometries and their matrix representations. The course is of particular interest to secondary mathematics teaching majors.

Prereqs: MATH 330 or equivalent

MATH 428 Numerical Methods (3 credits)

Cross-listed with ENGR 428 and PHYS 428

Joint-listed with MATH 529 and PHYS 528

Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications.

Prereqs: MATH 310.

MATH 430 Advanced Linear Algebra (3 credits)

Vector spaces, linear transformations, characteristic polynomial, eigenvectors, Hermitian and unitary operators, inner products, quadratic forms, Jordan canonical form, applications.

Prereqs: MATH 215 and MATH 330 or Instructor Permission

MATH 432 Numerical Linear Algebra (3 credits)

Analysis of efficiency and accuracy of large linear algebra problems; special emphasis on solving linear equations and finding eigenvalues.

Prereqs: MATH 275, MATH 330, and knowledge of a computer language

MATH 437 Mathematical Biology (3 credits)

General Education: Senior Experience

Modeling biological phenomena, mostly through differential equations; mathematical topics include stability analysis and limit cycles for nonlinear ODE's, spatial diffusion and traveling waves for PDE's; biological topics include models of predator-prey systems, infectious diseases, and competition.

Prereqs: MATH 310 or Permission Cooperative: open to WSU degree-seeking students.

MATH 438 Mathematical Modeling (3 credits)

Topics in the use of mathematics to model phenomena from science, business, economics, and engineering.

Prereqs: CS 120, MATH 310 and MATH 330, or Instructor Permission

MATH 451 Probability Theory (3 credits)

Cross-listed with STAT 451

Random variables, expectation, special distributions (normal, binomial, exponential, etc.), moment generating functions, law of large numbers, central limit theorem. Cooperative: open to WSU degree-seeking students. (Fall only)

Prereqs or Coreqs: MATH 275 or Permission

MATH 452 Mathematical Statistics (3 credits)

Cross-listed with STAT 452

Estimation of parameters, confidence intervals, hypothesis testing, likelihood ratio test, sufficient statistics. Cooperative: open to WSU degree-seeking students. (Spring only)

Prereqs: MATH 451 or Permission

MATH 453 Stochastic Models (3 credits)

Cross-listed with STAT 453

Joint-listed with MATH 538

Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 451 or Permission.

MATH 455 Applied Actuarial Science (1 credit)

Risk problems on the actuarial exam. Graded P/F.

Prereqs: MATH 451

MATH 461 Abstract Algebra I (3 credits)

Groups, rings, and fields. (Fall only)

Prereqs: MATH 215 and MATH 330; or Permission

MATH 462 Abstract Algebra II (3 credits)

Groups, rings, and fields. (Spring only)

Prereqs: MATH 461

MATH 471 Introduction to Analysis I (3 credits)

Topology of Euclidean n-space, limit and continuity, differentiation, integration. (Fall only)

Prereqs: MATH 275 and MATH 215; or Permission

MATH 472 Introduction to Analysis II (3 credits)

Topology of Euclidean n-space, limit and continuity, differentiation, integration. (Spring only)

Prereqs: MATH 471 or Permission

MATH 476 Combinatorics (3 credits)

Elementary counting methods, generating functions, recurrence relations, Polya's enumeration, enumeration of graphs, trees, searching, combinatorial algorithms. Recommended Preparation: MATH 176, or MATH 215, or MATH 376.

Prereqs: MATH 175 and MATH 330

MATH 480 Partial Differential Equations (3 credits)

Intro to Fourier analysis, application to solution of partial differential equations; classical partial differential equations of engineering and physics.

Prereqs: MATH 310 or Permission

MATH 483 Foundations of Machine Learning (3 credits)

This course covers mathematical foundations as well as basic algorithms for machine learning. Topics include algorithms for classification, regression, and clustering such as support vector machines, decision tree learning, and K-means; dimensionality reduction for data compression; and deep learning. The implementation of the algorithms will be in Python. Typically Offered: Varies.

Prereqs: MATH 183, MATH 275, and MATH 330; or by permission

MATH 499 (s) Directed Study (1-16 credits)

Credit arranged

MATH 500 Master's Research and Thesis (1-16 credits)

Credit arranged

MATH 501 (s) Seminar (1-16 credits)

Credit arranged

MATH 502 (s) Directed Study (1-16 credits)

Credit arranged

MATH 504 (s) Special Topics (1-16 credits)

Credit arranged

MATH 505 (s) Professional Development (1-16 credits)

Credit arranged. Credit earned in this course will not be accepted toward graduate degree programs.

MATH 510 Seminar on College Teaching of Mathematics (1 credit, max arranged)

Development of skills in the teaching of college mathematics; includes structure of class time, test construction, and various methods of teaching mathematics; supervision of teaching assistants in their beginning teaching assignments. Graded P/F.

Prereqs: Permission

MATH 521 Topology I (3 credits)

Basic concepts of point set and algebraic topology. Cooperative: open to WSU degree-seeking students.

MATH 523 Algebraic Topology I (3 credits)

Basic homotopy theory, covering spaces, homology theory, and applications.

MATH 528 Differentiable Manifolds (3 credits)

Fundamentals of smooth manifolds, tangent spaces, vector fields, Lie groups, integration on manifolds, and applications. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 521 and MATH 472

MATH 529 Numerical Methods (3 credits)

Cross-listed with PHYS 528

Joint-listed with ENGR 428, MATH 428, and PHYS 428

Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications. Additional projects and/or assignments required for graduate credit in PHYS 528.

Prereqs: MATH 310.

MATH 531 Complex Variables (3 credits)

Theory of functions of a complex variable. Cooperative: open to WSU degree-seeking students.

MATH 535 Real Variables (3 credits)

Measure and integration theory for functions of one or several variables.

MATH 536 Probability Theory (3 credits)

Random variables, characteristic functions, convergence theorems, central limit theorem, conditional probability, and stochastic processes as developed from a measure theoretic basis.

Prereqs: MATH 535 or Permission

MATH 537 Fourier Analysis (3 credits)

Basic properties of Fourier series, convergence of Fourier series, Fourier transforms, finite Fourier analysis, and applications to signal processing such as frames and wavelets. Recommended preparation: MATH 471 and 472; or Permission. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

MATH 538 Stochastic Models (3 credits)

Joint-listed with MATH 453 and STAT 453

Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 451 or Permission.

MATH 539 Theory of Ordinary Differential Equations (3 credits)

Existence, uniqueness, and stability of solutions of first-order systems; other topics. Cooperative: open to WSU degree-seeking students.

MATH 540 Partial Differential Equations (3 credits, max 3)

Existence and uniqueness theorems for the wave, heat, and Laplace's equations of physics; additional topics such as nonlinear models in mathematical biology, perturbation methods, etc. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 539 or Permission

MATH 555 Groups and Fields I (3 credits)

Groups, fields, polynomials, Galois theory, representation theory. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 461 and MATH 462; or equivalent

MATH 556 Groups and Fields II (3 credits)

Groups, fields, polynomials, Galois theory, representation theory. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 555 or Permission

MATH 557 Ring Theory (3 credits)

Rings, ideals, modules, commutative algebra. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 461 and MATH 462; or equivalent

MATH 558 Introduction to Algebraic Geometry (3 credits)

Affine and projective varieties, morphisms, functions on varieties, birational maps, applications. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 557 or Permission

MATH 559 Algebraic Number Theory (3 credits)

Dedekind rings, algebraic integers, prime ideals and their splittings, decomposition group, inertia group, ideal class group, quadratic extensions and cyclotomic extensions. Some class field theory, including Frobenius automorphism, Artin automorphism, Hilbert class field, adeles and ideles.

Prereqs: MATH 557 or permission.

MATH 561 (s) Seminar in Algebra (1-3 credits, max arranged)

Current literature.

MATH 563 Mathematical Genetics (3 credits)

Cross-listed with BIOL 563

Investigation of aspects of evolutionary biology with an emphasis on stochastic models and statistical methods; topics include: diffusion methods in molecular evolution, gene genealogies and the coalescent, inferring coalescent times from DNA sequences, population subdivision and F statistics, likelihood methods for phylogenetic inference, statistical hypothesis testing, the parametric bootstrap. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 160 or MATH 170 and STAT 251 or STAT 301

MATH 571 Functional Analysis I (3 credits)

Linear topological spaces and linear operators.

Prereqs: MATH 535

MATH 572 Functional Analysis II (3 credits)

Linear topological spaces and linear operators.

Prereqs: MATH 571

MATH 575 Graph Theory I (3 credits)

Basic concepts and theorems; topics include trees and connectivity, eulerian and hamiltonian graphs, graph colorings, matchings, graph decomposition, and extremal graph theory.

MATH 576 Graph Theory II (3 credits)

Basic concepts and theorems; topics include trees and connectivity, eulerian and hamiltonian graphs, graph colorings, matchings, graph decomposition, and extremal graph theory.

Prereqs: Instructor Permission

MATH 579 Combinatorics (3 credits)

Topics from enumerative combinatorics, design theory, extremal combinatorics and algebraic combinatorics.

MATH 596 MAT Comp Exam (1 credit)

Supervised preparation for the Master of Arts in Teaching comprehensive exam. Graded P/F.

MATH 598 (s) Internship (1-16 credits)

Credit arranged

MATH 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

MATH 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Mathematics Education (MTHE)

MTHE 235 Mathematics for Elementary Teachers I (3 credits)

Mathematical development of arithmetic and problem solving as those subjects are currently taught in elementary schools. Three lectures and one 1-hour lab per week. Typically Offered: Fall, Spring.

MTHE 236 Mathematics for Elementary Teachers II (3 credits)

Mathematical development of informal geometry, problem solving, and probability and statistics as those subjects are currently taught in elementary schools. Three lectures and one 1-hour lab per week.

Prereqs: MTHE 235

MTHE 409 Algebraic and Functional Reasoning (3 credits)

Examines the understandings that are foundational to advanced algebraic concepts, and how grade 5-10 students develop these ideas. Topics include strategies for solving equations and systems, covariational reasoning, properties of linear, quadratic, exponential, and trigonometric functions.

MTHE 410 Proof and Viable Argumentation (3 credits)

Develops viable argumentation as it can be found in grades 5-10 as a means of learning content, deepening understanding, and determining what is true and what is false mathematically. Topics include the language of argumentation, argument types, reasoning types, the distinction between proofs and viable arguments. Emphasizes how different argument types can contribute to student learning and increasing student discourse.

MTHE 513 Problem Solving Through History (3 credits)

Historical study of approaches to solving problems in geometry, number theory, and set theory. This course is specifically designed for the M. A. T. program in Mathematics and will not satisfy the requirements of other mathematics degree programs.

MTHE 516 Groups and Symmetry (3 credits)

Exploration of groups, symmetry, and permutations. This course is specifically designed for the M. A. T. program in Mathematics and will not satisfy the requirements of other mathematics degree programs.

Mechanical Engineering (ME)

ME 123 Introduction to Mechanical Design (3 credits)

Introduction to engineering design process and analysis techniques including problem solving skills, development of software learning skills, graphical analysis, data analysis, and documentation skills. The course includes lecture and lab periods each week. (Fall only)

Coreqs: MATH 143 and MATH 144

ME 201 (s) Engineering Team Projects (1-3 credits, max arranged)

Joint-listed with ME 401

Students will be introduced to a systems approach to designing, building and delivering an interdisciplinary engineering project, with an emphasis on learning how to realize a project in an organized team environment.

Projects are chosen at the discretion of the department. Additional project duties/assignments required for 400-level credit. Prereq for ME 401: Permission. Prereq for ME 201: Permission

ME 204 (s) Special Topics (1-16 credits)

Credit arranged

ME 223 Mechanical Design Analysis (3 credits)

Use of design and problem solving methodology to model requirements, conduct project learning, develop concepts, and realize prototypes. Projects feature elements of electromechanical design, rapid prototyping, and experimentation. Typically Offered: Fall and Spring.

Prereqs: ME 280, ENGR 123

Coreqs: MATH 175

ME 280 Programming Essentials for Engineers (3 credits)

Introduces fundamental principles and techniques of computing and software programming. The course aims to provide students with an understanding and ability to write small to medium-level programs that will allow them to perform computing tasks in various projects or coursework. Topics include procedural programming (methods, parameters, return values, etc.), basic controls and data structures, algorithms and problem-solving strategies, and software development tools and techniques. The course will use Python as the programming language, and is intended for students without any prior programming experience. Typically Offered: Fall.

Prereqs: MATH 143, MATH 144, ENGR 123

ME 299 (s) Directed Study (1-16 credits)

Credit arranged

ME 301 Computer Aided Design Methods (3 credits)

Engineering drawing literacy, pre-CAD planning, part modeling, assembly modeling, drawing package formulation, culminating team project involving virtual dissection and reassembly of a complex machine.

Typically Offered: Fall and Spring.

Prereqs: ENGR 210

ME 307 Group Mentoring I (1 credit)

Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Students must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).

Prereqs: Permission

ME 308 Group Mentoring II (1 credit)

Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Students must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).

Prereqs: Permission

ME 313 Dynamic Modeling of Engineering Systems (3 credits)

Application of basic engineering principles to model and analyze the dynamic response of engineering systems; problem solutions will utilize transfer function methods, state variable techniques, and simulation software. Typically Offered: Fall and Spring.

Prereqs: ME 223, ENGR 220, ENGR 240, MATH 310, and ME Certification

Coreqs: MATH 330

ME 322 Mechanical Engineering Thermodynamics (3 credits)

Thermodynamic properties of substances, first and second laws of thermodynamics, thermodynamic analysis of mechanical engineering thermal components and cycles, psychrometric process, and introduction to combustion systems. Typically Offered: Fall and Spring.

Prereqs: CHEM 111/CHEM 111L, PHYS 211/PHYS 211L, and ME Certification

ME 325 Machine Component Design I (3 credits)

Study of stress, deflection and stiffness, material properties, static and fatigue failure theory in the context of the analysis and design of machine components such as fasteners, welds, spring design and bearings. Significant use of solid modeling and use of equation solvers. Typically Offered: Spring.

Prereqs: ME 341, MSE 201, and ME Certification

ME 330 Experimental Methods for Engineers (3 credits)

Measurement systems and their application to engineering problems; topics include generalized performance of measurement systems, measuring and control devices, data acquisition and analysis, and report writing. Two lectures and one 2-hour lab per week. Typically Offered: Fall and Spring.

Prereqs: ENGR 240, and ME Certification

ME 341 Intermediate Mechanics of Materials (3 credits)

Mechanics of materials approach to: three-dimensional stress and strain, unsymmetrical bending, shear centers, curved beams, thick-walled pressure vessels, non-circular torsion; energy methods and advanced strength theories. Introduction to elementary kinematics. Significant use of solid modeling and use of equation solvers.

Prereqs: ME 301 and Certification

Coreqs: MSE 201

ME 345 Heat Transfer (3 credits)

Transmission by conduction of heat in steady and unsteady states, by free and forced convection, and by radiation; combined effects of conduction, convection, and radiation. Typically Offered: Fall and Spring.

Prereqs: ME 322, MATH 310, and ME Certification

Coreqs: ENGR 335

ME 398 (s) Engr Coop Internship I (1-16 credits)

Credit arranged. Supervised internship in professional engineering settings, integrating academic study with work experience; requires written report to be evaluated by a designated faculty member; details of co-op to be arranged with ME Department before start of co-op; cannot be counted as a technical elective.

ME 401 Engineering Team Projects (1-3 credits, max arranged)

Joint-listed with ME 201

Students will be introduced to a systems approach to designing, building and delivering an interdisciplinary engineering project, with an emphasis on learning how to realize a project in an organized team environment.

Projects are chosen at the discretion of the department. Additional project duties/assignments required for 400-level credit. Prereq for ME 401: Permission. Prereq for ME 201: Permission Graded Pass/Fail. Typically Offered: Fall and Spring.

ME 403 (s) Workshop (1-16 credits)

Credit arranged

ME 404 (s) Special Topics (1-16 credits)

Credit arranged

ME 407 Group Mentoring III (1 credit)

Mentoring of student groups in engineering classes where a process education environment is used; students taking this course will improve their engineering skill in the area they are mentoring as well as improving their team, communication, and leadership skills. Student must attend all classes or labs where group activities in the process education environment are done (a minimum of 2 mentoring sessions per week).

Prereqs: Permission

ME 410 Principles of Lean Manufacturing (3 credits)

Principles of lean manufacturing are introduced that provide a systematic process for identifying and eliminating non-value activities (waste) in production processes. Students learn these principles through a series of workshops, lectures, and hands-on simulations of lean principles. Three hours of lecture and six hours of outside work per week.

Prereqs: Senior standing in an engineering discipline or Permission

ME 412 Gas Dynamics (3 credits)

Compressible flow in ducts and nozzles, shock waves and expansion waves, and adiabatic two-dimensional compressible flow.

Prereqs: MATH 310, ME 322 or ENGR 320, and ENGR 335

ME 413 Engineering Acoustics (3 credits)

Joint-listed with ME 513 and ECE 579

Fundamentals of acoustics including wave theory; transmission through layers, generation and reception; low frequency models; application to sound measurement, transducers, loudspeaker cabinet design, and nondestructive testing; acoustic design project required. Additional projects/assignments required for graduate credit.

Prereqs: ENGR 240 or ECE 212, and MATH 310, or ME 313

ME 414 HVAC Systems (3 credits)

Joint-listed with ME 514

Application of thermodynamics, heat transfer, and fluid flow to understanding the psychrometric performance of systems and equipment; evaluating the performance characteristics, advantages, and disadvantages of the various types of HVAC systems including large tonnage refrigeration/chiller equipment, cooling coils, cooling towers, ducts, fans, and heat pump systems; economics of system and equipment selection. Cooperative: open to WSU degree seeking students.

Prereqs: ME 345

ME 415 Materials Selection and Design (3 credits)

Selection of materials for use in structural applications; consideration of environment, stress conditions, cost, and performance as guide to properties; optimization of choice of materials and fabrication methods; open-ended problems of real applications in various industries. Recommended Preparation: MSE 313 and MSE 456. (Spring only)

Prereqs: MSE 201 and ENGR 350

ME 416 FE Exam Review (1 credit)

Review of 10 essential topics on the Mechanical Engineering Fundamentals of Engineering exam, including preparation in each topic area based on online review sessions and solving sample problems.

Graded P/F

Prereqs: Senior Standing

ME 417 Turbomachinery (3 credits)

Joint-listed with ME 517

Introduction to the basic principles of modern turbomachinery. Emphasis is placed on steam, gas (combustion), wind and hydraulic turbines.

Applications of the principles of fluid mechanics, thermodynamics and aerodynamics to the design and analysis of turbines and compressors are incorporated. Additional technical research report and presentation required for graduate credit. ME 517 is cooperative: open to WSU degree-seeking students. Recommended Preparation: ENGR 320, ENGR 335.

ME 420 Fluid Dynamics (3 credits)

Joint-listed with ME 520 and CE 520

Credit not granted for both ME 420 and ME 520. A second fluid dynamics course featuring vector calculus and integral and differential forms of the conservation laws. Topics include fluid properties, fluid statistics, inviscid flow; conservation of mass, momentum, and energy; and turbulence. Other topics may be covered. Additional projects/assignments required for graduate credit.

Prereqs: ENGR 335, MATH 310, or Permission

ME 421 (s) Advanced Computer Aided Design (3 credits)

Use of solid modeling software for advanced component design, creation of complex multi-component assemblies, animation studies, and rendering. Course concludes with one month-long final project.

Prereqs: ME 301

Coreqs: ME 341

ME 424 Mechanical Systems Design I (3 credits)

General Education: Senior Experience

Study of production realization including project planning, concept design, detail design, and manufacturing processes with multiple realistic constraints. Concepts learned are applied to a two-semester, capstone design project. The project is continued in ME 426. (Fall only)

Prereqs: ME 301, ME 313, ME 325, ME 330, ME 345, and Certification

ME 426 Mechanical Systems Design II (3 credits)

General Education: Senior Experience

Continuation of each two-semester, capstone design project that was started in ME 424. (Spring only)

Prereqs: ME 424

ME 430 Senior Lab (3 credits)

Detailed lab investigation of engineering problem; statistical design of experiments; application of engineering principles to analyze experimental data; technical report writing; oral communication skills. One lecture and four hours of lab per week.

Prereqs: ME 313 and ME 330

ME 433 Combustion Engine Systems (3 credits)

Theory and characteristics of combustion engines; combustion process analysis; fuels, exhaust emissions and controls; system analysis and modeling.

Coreqs: ME 345 or Permission

ME 435 Thermal Energy Systems Design (3 credits)

Application of fluid mechanics, thermodynamics and heat transfer in the design of thermal energy systems; topics include thermal energy system component analysis and selection, component and system simulation, dynamic response of thermal systems, and system optimization.

Prereqs: ME 345

ME 436 Sustainable Energy Sources and Systems (3 credits)

An introduction to renewable energy conversion. Topics include: solar thermal, solar photovoltaic, and wind energy. Cooperative: open to WSU degree seeking students.

Prereqs: ME 345

ME 438 Sustainability and Green Design (3 credits)

Joint-listed with ME 538

Understanding the Concept of Sustainability, Industrial Ecology and Sustainable Engineering, Metabolic Analysis, Sustainable Engineering, Design for Environment and Sustainability, Life Cycle Assessment, Energy & Water and Industrial Ecology, The status of Resources, Sustainable Engineering and Economics Development. Cooperative: open to WSU degree seeking students.

Prereqs: MATH 310

ME 450 Fundamentals of Computational Fluid Dynamics (3 credits)

Joint-listed with CE 550 and ME 551

Governing equations of fluid flow; fundamentals of turbulence modeling; accuracy and stability of discretization schemes; verification and validation; boundary and initial conditions; grid generation; CFD post-processing. Application of CFD software (ANSYS FLUENT) through five hands-on CFD Labs including internal viscous pipe flows, external flows over a 2D airfoil and a circular cylinder, and flows in a 2D driven cavity.

Prereqs: ENGR 335 and MATH 330

ME 451 Experimental Methods in Fluid Dynamics (3 credits)

Joint-listed with ME 551

The objective of this course is to develop the knowledge and skills to be able to design and perform fluid dynamics experiments (and experiments in related areas) and to interpret and report the results. Learn the words, the concepts, and experimental skills in areas including dimensional analysis and scaling of experiments, flow visualization, velocity and flow rate measurements, turbulence measurements, and sediment sizing and transport measurements. Additional projects/assignments required for graduate credit. One 1-1/2 hour lecture and one 3-hour lab per week.

Recommended Preparation: ENGL 317 and ENGR 335

ME 454 Assistive Technologies for Physical Impairment (3 credits)

Introduction to assistive and rehabilitative robotics research. Topics include but not limited to: normal and pathological function in the brain and body; exoskeleton robotics; human-machine-interfaces; and development of R&D technical skills culminating in a team design project. Additional project/assignment components required for graduate credit.

Prereqs: Junior Standing or Instructor Permission

ME 455 Biomechanics: Genome to Phenome (3 credits)

Joint-listed with ME 555

The course introduces students to the history and evolution of plant biomechanics with a specific focus on grass species and crops. A multiscale understanding of biomechanical structures and features will be presented. Students will learn appropriate testing methodologies to quantify material properties of plant tissue at multiple scales. Additional work required for graduate credit. Typically Offered: Fall (Odd Years).

Prereqs: Junior standing or instructor permission.

ME 458 Finite Element Applications in Engineering (3 credits)

Joint-listed with ME 558

The finite element method is an essential tool for the design and research activities performed in engineering companies and academic institutions.

The goal of this course is to introduce students to the use of the finite element method by focusing on a range of engineering applications and employing an interactive commercial finite element code. Students will learn how to solve various problems from several mechanical engineering areas including solid mechanics, heat transfer and fluid mechanics. When available, analytical solutions will be compared with the finite element solutions for validation purposes. ME 558 is cooperative: open to WSU degree seeking students.

Prereqs: (ME 322 or ENGR 320) and ENGR 350

Coreqs: ME 341 or Instructor Permission

ME 459 Robotic Systems Engineering I (3 credits)

Cross-listed with CS 453

Joint-listed with CS 553, ME 559

Topics to be covered include: principles of distributed systems control, interfacing and signal conditioning of sensors and actuators, data acquisition and signal processing, microprocessor-based control, physical modeling, and hardware and software simulation for model validation and control. Typically Offered: Fall and Spring.

Prereqs: Instructor Permission

ME 461 Fatigue and Fracture Mechanics (3 credits)

Fracture mechanics approach to structural integrity, fracture control, transition temperature, microstructural and environmental effects, fatigue and failure analysis.

Prereqs: MSE 201 and ENGR 350

ME 464 Robotics: Kinematics, Dynamics, and Control (3 credits)

Mathematical analysis applied to spatial robotics including: Rigid body motion using screw theory, forward and inverse kinematics, analyses of forces and velocities using the manipulator Jacobian, serial and parallel chains, robot dynamics and simulation, nonlinear control and adaptive control, and Lyapunov stability theory. Additional projects/assignments required for graduate credit. Recommended Preparation is CS 120. Typically Offered: Fall.

Prereqs: MATH 310, MATH 330, and ME 313 or equivalent, ME 330

ME 466 Compliant Mechanism Design (3 credits)

Joint-listed with ME 566

Will focus on the design, analysis, and manufacture of compliant mechanisms. Traditional kinematics and elastic deflections will be reviewed, and the area of large-deflection analysis will be introduced. The compliant mechanism theory will be introduced and applied. Additional coursework required for graduate credit. Typically Offered: Fall (Odd Years).

Prereqs: ME 341

Coreqs: ME 325 Cooperative: open to WSU degree-seeking students

ME 472 Mechanical Vibrations (3 credits)

Free and forced vibration of single and multiple degree of freedom systems; response of mechanical systems to inputs of varying complexity, ranging from single frequency to pseudo-random; applications to mechanical design and vibration control. Cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 220, MATH 310, and ME 313; or Graduate standing.

ME 480 Introduction to Programming for Engineers (3 credits)

This course will provide an introduction to the programming world. Topics covered include data types, functions, logic, conditionals, recursion, and sorting. More advanced topics are introduced, including classes, methods, and input/output. Programs are developed using modern languages (e. g. Python) and applications in engineering are explored (e. g. data acquisition, data analysis, computer vision, and artificial intelligence.)

ME 481 Control Systems (3 credits)

Cross-listed with ECE 470

Analysis and design of feedback control systems using frequency and time domain methods, and computer-aided design tools. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 330 Prereq for Electrical Engineering and Computer Engineering majors: ECE 350 Prereq for Mechanical Engineering majors: ME 313

ME 490 Solid Modeling, Simulation and Manufacturing Capstone (3 credits)

Use of solid modeling software focused on preparation for certification examinations, introduction to multi-physics numerical simulation, and computer aided manufacturing (CAM). A major final project is required. (Fall only)

Prereqs: Permission

ME 495 Mechanics in Design and Manufacturing (3 credits)

An examination of the mechanics of deformation, shaping, and forming of materials, and the manufacturing processes utilizing them. Discussion of the four main material classes, their properties and their applications. Topics include elasticity, plasticity, and continuous material flow, microstructural concerns, advanced material failure mechanisms, materials testing, and design for manufacture.

Prereqs: ME 341

ME 499 (s) Directed Study (1-16 credits)

Credit arranged. Selected topics. Detailed report required.

ME 500 Master's Research and Thesis (1-16 credits)

Credit arranged

ME 501 (s) Seminar (1-16 credits)

Credit arranged

ME 502 (s) Directed Study (1-16 credits)

Credit arranged Supervised study, including critical reading of current literature.

Prereqs: Permission

ME 503 (s) Workshop (1-16 credits)

Credit arranged

ME 504 (s) Special Topics (1-16 credits)

Credit arranged

ME 505 (s) Professional Development (1-16 credits)

Credit arranged

ME 513 Engineering Acoustics (3 credits)

Cross-listed with ECE 579

Joint-listed with ME 413

Fundamentals of acoustics including wave theory; transmission through layers, generation and reception; low frequency models; application to sound measurement, transducers, loudspeaker cabinet design, and nondestructive testing; acoustic design project required. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: ENGR 240 or ECE 212, and MATH 310, or ME 313

ME 514 HVAC Systems (3 credits)

Joint-listed with ME 414

Application of thermodynamics, heat transfer, and fluid flow to understanding the psychrometric performance of systems and equipment; evaluating the performance characteristics, advantages, and disadvantages of the various types of HVAC systems including large tonnage refrigeration/chiller equipment, cooling coils, cooling towers, ducts, fans, and heat pump systems; economics of system and equipment selection. Cooperative: open to WSU degree seeking students.

Prereqs: ME 345

ME 517 Turbomachinery (3 credits)

Joint-listed with ME 417

Introduction to the basic principles of modern turbomachinery. Emphasis is placed on steam, gas (combustion), wind and hydraulic turbines. Applications of the principles of fluid mechanics, thermodynamics and aerodynamics to the design and analysis of turbines and compressors are incorporated. Additional technical research report and presentation required for graduate credit. ME 517 is cooperative: open to WSU degree-seeking students. Recommended Preparation: ENGR 320, ENGR 335.

ME 520 Fluid Dynamics (3 credits)

Cross-listed with CE 520

Joint-listed with ME 420

Credit not granted for both ME 420 and ME 520. A second fluid dynamics course featuring vector calculus and integral and differential forms of the conservation laws. Topics include fluid properties, fluid statistics, inviscid flow; conservation of mass, momentum, and energy; and turbulence. Other topics may be covered. Additional projects/assignments required for graduate credit.

Prereqs: ENGR 335, MATH 310, or Permission

ME 524 Sustainable Food-Energy-Water Systems (3 credits)

Cross-listed with BE 524

This course covers sustainability analysis, life cycle assessment, and applications of sustainability across design and manufacturing processes, as well as food-energy-water systems, which establishes the concept of sustainability, and sustainable engineering. This course introduces the intersection of sustainability and food-energy-water systems through sustainable development, sustainability principles, and environmental analysis. Foundational knowledge in physics, chemistry, calculus, engineering materials; engineering design and manufacturing; foundational knowledge in business operations and supply chain. Typically Offered: Spring.

ME 527 Thermodynamics (3 credits)

Thermodynamic laws for design and optimization of thermodynamic systems, equations of state, properties of ideal and real fluids and fluid mixtures, stability, phase equilibrium, chemical equilibrium, applications of thermodynamic principles. Cooperative: open to WSU degree-seeking students.

Prereqs: ME 322 or ENGR 320 or Permission

ME 529 Combustion and Air Pollution (3 credits)

Formation of pollutants during combustion processes and their subsequent transformations in the atmosphere; emphasis on the effects of design and operating parameters of combustion devices on the nature and composition of exhaust gases, improvements, post-combustion treatment of effluent gases, atmospheric chemistry, transport of pollutants, smog formation, acid rain, ozone formation and destruction.

Prereqs: ENGR 320 and ENGR 335, ME 345 or Permission

ME 538 Sustainability and Green Design (3 credits)

Joint-listed with ME 438

Understanding the Concept of Sustainability, Industrial Ecology and Sustainable Engineering, Metabolic Analysis, Sustainable Engineering, Design for Environment and Sustainability, Life Cycle Assessment, Energy & Water and Industrial Ecology, The status of Resources, Sustainable Engineering and Economics Development. Cooperative: open to WSU degree seeking students.

Prereqs: MATH 310

ME 539 Advanced Mechanics of Materials (3 credits)

Cross-listed with CE 510

Limitations of results of elementary mechanics of materials, complex situations of loading and structural geometry, applications to design of machines and structure, introduction to elasticity. Cooperative: open to WSU degree-seeking students.

Prereqs: ME 341 or CE 342

ME 540 Continuum Mechanics (3 credits)

Stress and deformation of continua using tensor analysis; relationship between stress, strain, and strain rates in fluids and solids; applications. Cooperative: open to WSU degree seeking students.

Prereqs: Permission

ME 541 Mechanical Engineering Analysis (3 credits)

Mathematical modeling and solutions to mechanical engineering problems; analytical solutions to linear heat and mass diffusion, waves and vibrations; introduction to approximate techniques. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 330 and MATH 310 or Equivalent

ME 544 Conduction Heat Transfer (3 credits)

Formulation of steady-state and transient one- and multi-dimensional heat conduction problems; analytical solution techniques for linear problems including separation of variables, integral transforms, and Laplace transforms.

Prereqs: ME 345 or equivalent, or Permission

ME 546 Convective Heat Transfer (3 credits)

Energy conservation equations; laminar and turbulent forced convective heat transfer; internal and external flow; free convection. Cooperative: open to WSU degree-seeking students.

Prereqs: ME 345 or Permission

ME 547 Thermal Radiation Processes (3 credits)

Thermal radiation; radiation interchange among surfaces; radiation in absorbing-emitting gases; combined modes of heat transfer.

Prereqs: ME 345 or Permission

ME 549 Finite Element Analysis (3 credits)

Cross-listed with CE 546

Formulation of theory from basic consideration of mechanics; applications to structural engineering, solid mechanics, soil and rock mechanics; fluid flow. Cooperative: open to WSU degree seeking students.

Prereqs: ME 341 or CE 342

ME 550 Advanced Computational Fluid Dynamics (3 credits)

Introduction to CFD OpenFoam and CFD techniques for heat transfer, free-surface flows, fluid-structure interactions, and dynamic mesh method. Application of CFD through hands-on CFD Labs including OpenFoam solutions to the five canonical flows studied in ME 450 and ANSYS Multiphysics or OpenFoam solutions to 2D wave generated by a submerged foil, heat transfer through a 2D insulated box, dynamic meshes for two cars crossing each other, and fluid-structure interaction simulation for a flapping membrane. Typically Offered: Spring (Odd Years).

Prereqs: ME 450. Cooperative: open to WSU degree-seeking students.

ME 551 Experimental Methods in Fluid Dynamics (3 credits)

Cross-listed with CE 550

Joint-listed with ME 450

Governing equations of fluid flow; fundamentals of turbulence modeling; accuracy and stability of discretization schemes; verification and validation; boundary and initial conditions; grid generation; CFD post-processing. Application of CFD software (ANSYS FLUENT) through five hands-on CFD Labs including internal viscous pipe flows, external flows over a 2D airfoil and a circular cylinder, and flows in a 2D driven cavity. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree seeking students.

Prereqs: ENGR 335 and MATH 330

ME 554 Assistive Technologies for Physical Impairment (3 credits)

Introduction to assistive and rehabilitative robotics research. Topics include but not limited to: normal and pathological function in the brain and body; exoskeleton robotics; human-machine-interfaces; and development of R&D technical skills culminating in a team design project. Additional project/assignment components required for graduate credit.

Prereqs: Junior Standing or Instructor Permission

ME 555 Biomechanics: Genome to Phenome (3 credits)

Joint-listed with ME 455

The course introduces students to the history and evolution of plant biomechanics with a specific focus on grass species and crops. A multiscale understanding of biomechanical structures and features will be presented. Students will learn appropriate testing methodologies to quantify material properties of plant tissue at multiple scales. Additional work required for graduate credit. Typically Offered: Fall (Odd Years).

ME 558 Finite Element Applications (3 credits)

Joint-listed with ME 458

The finite element method is an essential tool for the design and research activities performed in engineering companies and academic institutions. The goal of this course is to introduce students to the use of the finite element method by focusing on a range of engineering applications and employing an interactive commercial finite element code. Students will learn how to solve various problems from several mechanical engineering areas including solid mechanics, heat transfer and fluid mechanics. When available, analytical solutions will be compared with the finite element solutions for validation purposes. Cooperative: open to WSU degree seeking students (ME 558 only).

Prereqs: ME 322 (or ENGR 320) and ENGR 350

Coreqs: ME 341 or instructor permission

ME 559 Robotic Systems Engineering I (3 credits)

Cross-listed with CS 553

Joint-listed with CS 453, ME 459

Topics to be covered include: principles of distributed systems control, interfacing and signal conditioning of sensors and actuators, data acquisition and signal processing, microprocessor-based control, physical modeling, and hardware and software simulation for model validation and control. Typically Offered: Fall and Spring.

ME 564 Robotics: Kinematics, Dynamics, and Control (3 credits)

Mathematical analysis applied to spatial robotics including: Rigid body motion using screw theory, forward and inverse kinematics, analyses of forces and velocities using the manipulator Jacobian, serial and parallel chains, robot dynamics and simulation, nonlinear control and adaptive control, and Lyapunov stability theory. Additional projects/assignments required for graduate credit. Recommended Preparation is CS 120. Typically Offered: Fall.

Prereqs: MATH 310, MATH 330, and ME 313 or equivalent, ME 330

ME 566 Compliant Mechanism Design (3 credits)

Joint-listed with ME 466

Will focus on the design, analysis, and manufacture of compliant mechanisms. Traditional kinematics and elastic deflections will be reviewed, and the area of large-deflection analysis will be introduced. The compliant mechanism theory will be introduced and applied. Additional coursework required for graduate credit. Typically Offered: Fall (Odd Years).

Coreqs: ME 325 Cooperative: open to WSU degree-seeking students

ME 571 Building Performance Simulation for Integrated Design (3 credits)

Cross-listed with ARCH 574

3 credit This course focuses on design decisions that impact energy, thermal, visual and acoustic comfort with a strong emphasis on building simulation tools. This course provides students with the understanding of the nature of building thermal comfort, building envelope behavior, ventilation requirements, indoor air quality, passive cooling systems, energy conservation, and the importance of iterative building simulation in achieving high performance buildings.

ME 583 Reliability of Engineering Systems (3 credits)

Cross-listed with CE 541

Fundamentals of reliability theory, system reliability analysis including common-mode failures and fault tree and event tree analysis, time-dependent reliability including testing and maintenance, propagation of uncertainty, human reliability analysis, practical applications in component and system design throughout the semester. Cooperative: open to WSU degree-seeking students.

Prereqs: Permission

ME 598 (s) Internship (1-16 credits)

Credits arranged

ME 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

ME 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Medical Science (MEDS)

MEDS 400 (s) Seminar (1-16 credits)

Credit arranged

MEDS 404 (s) Special Topics (1-16 credits)

Credit arranged

MEDS 499 (s) Directed Study (1-16 credits)

Credit arranged

MEDS 501 (s) Seminar (1-16 credits)

Credit arranged

MEDS 502 (s) Directed Study (1-16 credits)

Credit arranged. Areas normally offered are directed dissection of the extremities, trunk, head, neck, abdomen, and pelvis; endocrinology, physiology, and other medically related studies. (Spring only)

MEDS 504 (s) Special Topics (1-16 credits)

Credit arranged

MEDS 506 Introduction to Primary & Continuity Care Clerkship (4 credits)

Introduces medical students to continuity of care by working with practicing physicians and coinciding with instruction in communication skills, interviewing techniques, physical examinations, documentation, and clinical reasoning. Includes hospital-based patient encounters with an introduction to and the development of the physician role. Topics covered in primary and preventative care, geriatrics, rehabilitation, palliative care, behavioral health, and pain management. Graded P/F. (Fall only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 507 Foundations of Clinical Medicine (2 credits)

Introduction to continuity of care by working with practicing physicians and coinciding with instruction in communication skills, interviewing techniques, physical examinations, documentation, and clinical reasoning. Includes hospital-based patient encounters with an introduction to the development of the physician role. Graded Pass/Fail. Typically Offered: Summer.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 508 Introduction to Primary & Continuity Care Clerkship (4 credits)

Introduces medical students to continuity of care by working with practicing physicians and coinciding with instruction in communication skills, interviewing techniques, physical examinations, documentation, and clinical reasoning. Includes hospital-based patient encounters with an introduction to and the development of the physician role. Topics covered in primary and preventative care, geriatrics, rehabilitation, palliative care, behavioral health, and pain management. Graded P/F. (Spring only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 510 Fundamentals of Medical Science & Research (13 credits)

Comprehensive introduction to foundational basic science and research concepts in medicine. Topics covered include molecular and cell biology; human physiology, genetics and biochemistry; community health and disease; clinical epidemiology, research study design and data analysis. Incorporates fundamental principles of anatomy, pathology, and pharmacology, and medicine in society. Graded P/F. Typically Offered: Summer.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program.

MEDS 515 Ecology of Health & Medicine-Foundations 1 (1 credit)

This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Graded P/F.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 517 Research Methods (1 credit)

Community health and disease, including assessment of disease risk and mechanisms of epidemic detection, spread, and control; interpretation of research design, data analysis, bias source; and clinical epidemiology, including evaluation and application of diagnostic tests, natural history of disease, and quantitative aids for clinical decision making.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 518 Air, Fluids and Salts (10 credits)

Comprehensive interdisciplinary introduction to the respiratory and renal-urinary systems and medicine, including pulmonary and renal anatomy, physiology, radiology, pathology, and pharmacology. Topics covered include ventilation mechanics; obstructive, restrictive, and pulmonary-vascular diseases; renal function; and common kidney diseases. Graded Pass/Fail. Typically Offered: Spring Semester.

Prereqs: Admission to the University of Washington School of Medicine WWAMI Program

MEDS 519 Infections and Immunity (10 credits)

Comprehensive introduction to the fundamentals of the immune system, microbiology, infectious diseases, inflammation and repair. Topics covered include the pathogenesis and immunity of infectious disease, immunodeficiencies, hypersensitivity, autoimmunity, and the basis of immunologic diagnostics. Integrates relevant principles of anatomy, pathology, and pharmacology and medicine in society. Pass/Fail only.

MEDS 525 Ecology of Health & Medicine-Foundations 3 (1 credit)

This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Graded P/F.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 527 Investigative Inquiry (6 credits)

The purpose of the independent investigative inquiry - the III - portion of the curriculum is to engage students in activities that will foster the skills of life-long learning essential for practicing physicians in the 21st century. Each student selects a topic of particular interest to them and investigates the subject independently, following the advice of a faculty advisor and other resources in the WWAMI community.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 528 Investigative Inquiry Project (1 credit)

Students will engage in a project with an in-depth focus on a health-related issue, thereby giving additional context to their training and career as a physician. In the process, they will develop the skills to acquire and critically evaluate new information under the guidance of faculty mentorship. This will culminate in dissemination of their scholarly work through a poster presentation or a final paper, depending on the type of scholarship chosen.

Prereqs: MEDS 527

MEDS 529 Circulatory System (16 credits)

This course provides an interdisciplinary approach to cardiovascular, respiratory, and renal-urinary medicine, including anatomy, physiology, pathology, medicine and surgery. Topics include cardiac electrophysiology and cardiac muscle mechanics, myocardial infarction and cardiac repair, thoracic and pulmonary anatomy, ventilator mechanics, gas exchange, obstructive, restrictive, and pulmonary-vascular diseases, renal function, and common kidney diseases. Graded P/F. (Spring only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 533 Cardiovascular System (8 credits)

Comprehensive interdisciplinary introduction to cardiovascular biology and medicine, including thoracic anatomy, physiology, radiology, pathology, pharmacology, and surgery. Topics covered include cardiac electrophysiology, cardiac muscle mechanics, myocardial infarction, and cardiac repair. Graded Pass/Fail. Typically Offered: Spring.

Prereqs: Admissions to the University of Washington School of Medicine WWAMI Program

MEDS 536 Ecology of Health & Medicine-Foundations 3 (1 credit)

This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Graded P/F.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 537 Cancer, Hormones and Blood (10 credits)

Comprehensive introduction to the fundamentals of endocrinology, hematology, and oncology. Topics covered include endocrine regulation of metabolism; normal physiology and pathophysiologic mechanisms responsible for clinically important endocrine disorders; disturbances in red cell, white cell, and platelet production; abnormalities of hemostasis; and malignant neoplasia. Integrates relevant principles of anatomy, pathology and pharmacology, and medicine in society. Graded Pass/Fail. Typically Offered: Fall.

Prereqs: Admission to University of Washington School of Medicine WWAMI Program

MEDS 538 Muscles, Joints, Bones and Skin (8 credits)

Comprehensive introduction to the fundamentals of the musculoskeletal system and dermatology. Topics covered include clinical manifestations in the skin, muscles, bones, and joints and the pathophysiology of trauma, aging, infection, and inflammation. Integrates relevant principles of anatomy, pathology, and pharmacology. Graded Pass/Fail. Typically Offered: Spring.

Prereqs: Admission to University of Washington School of Medicine WWAMI Program

MEDS 539 Advanced Gross Anatomy I for Teachers (9 credits)

This is the first of two graduate courses that will cover the gross anatomy of the human body in depth, using human cadavers. Its goal is to prepare the students to become professional Anatomy instructors who can teach this material in Gross Anatomy courses in Medical, Dental, or Physical Therapy Schools. Additionally, they will be able to teach Anatomy or Anatomy and Physiology courses for undergraduate students in Health programs such as nursing, pre-med, pre-dent, pre-physical therapy, exercise science, and pharmacy programs. Typically Offered: Summer.

Prereqs: Instructor Permission

MEDS 540 Blood, Cancer & Musculoskeletal (8 credits)

This course familiarizes students with the basic pathophysiologic mechanisms leading to disturbances of red cell, white cell, and platelet production, as well as abnormalities of hemostasis presenting clinical problems. The musculoskeletal content will focus on clinical manifestations in the musculoskeletal system and pathophysiology of trauma, aging, infection, and inflammation. Graded P/F. (Spring only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 541 Advanced Gross Anatomy II, for Teachers (9 credits)

This is the second of two graduate courses that will cover the gross anatomy of the human body in depth, using human cadavers. It will directly follow Advanced Anatomy I in each summer session. The goal of these courses is to prepare the students to become professional Anatomy instructors who can teach this material in Gross Anatomy courses in Medical, Dental, or Physical Therapy Schools. Additionally, they will be able to teach Anatomy or Anatomy and Physiology courses for undergraduate students in Health programs such as nursing, pre-med, pre-dent, pre-physical therapy, exercise science, and pharmacy programs. Typically Offered: Summer.

Prereqs: Instructor Permission

MEDS 542 Histology for Anatomy Teachers (4 credits)

This is an online class that will cover the microscopic anatomy (histology) of the mammalian and human body. Histology covers the body's cells and subcellular structures, its tissues, and the microscopic structure of its organs. The goal of this course is to prepare Anatomy teachers to present this material in Histology courses in Medical Schools, or in Anatomy or Anatomy and Physiology courses for undergraduate students in Health Programs such as nursing, pre-physical therapy and pre-pharmacy. Typically Offered: Fall.

Prereqs: Instructor Permission

MEDS 544 Medical Pathophysiology (4 credits)

This course is a comprehensive study of underlying concepts common to the major pathophysiologic processes of the body. The course is designed for those interested in teaching pathology or pathophysiology or related disciplines or for health and pre-health students. The course adopts a system based approach to pathology and integrates material across systems using diseases such as cancer. Typically Offered: Spring.

Prereqs: Instructor Permission

MEDS 545 Ecology of Health & Medicine-Foundations 4 (1 credit)

This course integrates School of Medicine thematic content with an emphasis on core concepts needed for clinical practice in the changing healthcare environment. Students will explore areas related to humanism in medicine including the themes of diversity, health equity, ethics, professionalism, and determinants of health. Graded P/F.

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 546 Medical Neuroanatomy for Anatomy Teachers (4 credits)

This is an online course that will cover topics in neuroanatomy. Topics include functional organization of the human nervous system, neurophysiology, supporting structures, and clinical relevance of these topics for health care practitioners. Typically Offered: Fall.

Prereqs: Instructor Approval

MEDS 550 Energetics and Homeostasis (10 credits)

This course covers metabolism, nutrition, obesity, diabetes, gastrointestinal/liver physiology, and endocrinology. Topics include physiology and pathology of digestion and hepatic function, principles and practice of clinical nutrition, the endocrine integration of metabolism, and clinically important endocrine pathophysiology. Additionally, this course introduces anatomy, pathology, and pharmacology of the endocrine and GI Systems. Graded P/F. (Spring only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 560 Mind, Brain and Behavior (14 credits)

In this course, the foundational principles of the organization and function of the head, neck and central nervous system are explained with a focus on clinical application of this knowledge to systematically approach the differential diagnosis and management of major neurologic, psychiatric and behavioral disorders. Current therapeutic approaches to disease are explained including pharmacological, behavioral, surgical and other therapies. Graded P/F. (Fall only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 570 Lifecycle and Reproduction (8 credits)

This course will cover normal and abnormal human development, reproductive functions including formation and maturation of ova and sperm, menstruation, normal pregnancy, and labor and delivery. Provides information concerning infertility, family planning techniques, urinary disorders, reproductive aging and demography of human population. Additionally, this course includes fundamental scientific principles in pelvic anatomy, pathology, histology, imaging and pharmacology. Graded P/F. (Fall only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 580 Consolidation and Transition (12 credits)

Reinforces content in the UWSOM foundations phase. Learning experiences will address key content areas which need further review identified throughout terms 1 and 2, with specific sessions developed as indicated; faculty/staff and peer educators will provide sessions for this basic science review as well as preparation for clerkships. Graded P/F. (Spring Only)

Prereqs: Admission to the University of Washington School of Medicine WWAMI program

MEDS 597 Graduate Practicum (1-3 credits, max 3)

Military Science (MS)

MS 101 Introduction to the Army and Critical Thinking (1 credit)

Introduces Cadets to the personal challenges and competencies that are critical for effective leadership. Cadets learn how the personal development of life skills such as critical thinking, goal setting, time management, stress management, and comprehensive fitness relate to leadership, officership, and the Army profession. Labs include leader's reaction/ropes course, basic survival skills, drill and ceremony, and emergency preparedness. One lecture hour and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets

MS 102 Introduction to the Profession of Arms (1 credit)

Overviews basic leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Cadets explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises. Labs include orienteering, a teambuilding exercise, first aid, cultural protection, and ethics problem solving. One lecture hour and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets.

MS 103 Leadership Lab I (1 credit, max 2)

This leadership lab is a requirement for those Freshman on an ROTC contract or scholarship. It is conducted outside and allows cadets to apply their classroom skills from MS 101 and MS 102 in a practical environment.

Coreqs: MS 101 or MS 102

MS 150 Army Physical Fitness Training I (1 credit, max 2)

Physical training, three days a week, is a requirement for all Freshman in the Army ROTC program that are on scholarship or contracted. This program is designed to build and maintain a level of fitness that allows cadets to pass the Army Combat Physical Fitness test which is a commissioning and scholarship requirement.

Coreqs: MS 101 or MS 102

MS 201 Foundations of Leadership I (2 credits)

Develops leadership skills and introduces different leadership theories. Furthers personal development such as time management and effective communication and briefing skills. Cadets explore tactics and techniques such as troop leading procedures, tactical movement, problem solving, and land navigation. Labs deepen understanding of the leader's reaction/ropes course, basic survival skills, drill and ceremony, and emergency preparedness. Two lecture hours and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets.

Prereqs: MS 102 or Permission

MS 202 Foundations of Leadership II (2 credits)

Examines the challenges of leading teams in the complex operational environment. The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. Prepares Cadets for third year MS classes. Cadets develop greater self awareness as they assess their own leadership styles and practice communication and team building skills. Case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. Labs deepen understanding of orienteering, teambuilding exercise, first aid, cultural protection, and ethics problem solving. Two lecture hours and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets.

Prereqs: MS 201 or Permission

MS 204 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: Permission

MS 210 Leadership Lab II (1 credit, max 2)

This leadership lab is a requirement for those Sophomores on an ROTC contract or scholarship. It is conducted outside and allows cadets to apply their classroom skills from MS 201 and MS 202 in a practical environment.

Coreqs: MS 201 or MS 202

MS 255 Army Physical Fitness Training II (1 credit, max 2)

Physical training three days a week is a requirement for all Freshman in the Army ROTC program that are on scholarship or contracted. This program is designed to build and maintain a level of fitness that allows cadets to pass the Army Combat Physical Fitness test which is a commissioning and scholarship requirement.

Coreqs: MS 201 or MS 202

MS 298 (s) Internship (1-16 credits)

Credit arranged

MS 299 (s) Directed Study (1-16 credits)

Credit arranged

MS 301 Adaptive Team Leadership (3 credits)

Challenges cadets to study, practice, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad tactical operations. Cadets receive systematic and specific feedback on their leadership attributes and actions. Based on such feedback, as well as their own self-evaluations, cadets continue to develop their leadership and critical thinking abilities. The focus is developing cadets' tactical leadership abilities to enable them to succeed at ROTC's summer Cadet Leader Course (CLC). Cadets help lead joint labs with the first two MS levels. Three lecture hours and one leadership lab hour.

Prereqs: MS 202 or Permission. Permission may be granted to students who have attended Leadership Training Camp or Basic Training from any U. S. military branch of service

MS 302 Applied Team Leadership (3 credits)

Uses increasingly intense situations applying team leadership challenges to build cadet awareness and skills in leadership tactical operations at the small unit level. Cadets review aspects of full spectrum operations. They also conduct military briefings and develop proficiency in the operation orders process. The focus is on exploring, evaluating and developing skills in decision-making, persuading, and motivating team members in the contemporary operating environment. Cadets help lead joint labs with the first two MS levels. Three lecture hours and one leadership lab hour

Prereqs: MS 301 or Permission. Permission may be granted to students who have attended Leadership Training Camp or Basic Training from any U. S. military branch of service

MS 303 Leadership Lab III (1 credit, max 2)

This leadership lab is a requirement for all Juniors in the Army ROTC program. It is conducted outside and allows cadets to apply their classroom skills, from MS 301 and MS 302 in a practical environment. This includes instructing, leading, and training our Sophomore and Freshman cadets.

Coreqs: MS 301 or MS 302

MS 355 Army Physical Fitness Training III (1 credit, max 2)

Physical training three days a week is a requirement for all Freshman in the Army ROTC program that are on scholarship or contracted. This program is designed to build and maintain a level of fitness that allows cadets to pass the Army Combat Physical Fitness test, which is a commissioning and scholarship requirement.

Coreqs: MS 301 or MS 302

MS 401 Mission Command and the Army Profession (3 credits)

Explores the dynamics of leading in the complex situations of current military operations. Cadets will examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Cadets also explore aspects of interacting with non-government organizations, civilians on the battlefield, the decision making processes and host nation support. The course places significant emphasis on preparing Cadets for BOLC B and their first unit of assignment. It uses mission command case studies and scenarios to prepare you to face the complex ethical demands of serving as a commissioned officer in the United States Army. Three lecture hours and one leadership lab hour.

Prereqs: MS 301, MS 302

MS 402 Mission Command and the Company Grade Officer (3 credits)

Explores the dynamics of leading in complex situations during Unified Land Operations. It examines the Art of Command and how to properly communicate with your NCOs and Soldiers. During Cultural Awareness and Cultural Property Protection (CPP), they will discuss numerous situations on how ethical decisions impact personnel and the unit mission. Through the understanding of their roles and responsibilities, they will learn about Comprehensive Soldier Fitness (CSF), Being Ready and Resilient (R2C), and Individual and Family Readiness can assist them in preparing their Soldiers and their Families on reducing and managing stress during times of uncertainty. The course places significant emphasis on preparing Cadets for BOLC B and their first unit of assignment. It uses mission command case studies and scenarios to prepare them to face the complex ethical demands of serving as a commissioned officer in the United States Army. Three lecture hours and one leadership lab hour.

Prereqs: MS 301, MS 302

MS 404 (s) Special Topics (1-16 credits)

Credit arranged

MS 406 Leadership Lab IV (1 credit, max 2)

This leadership lab is a requirement for all Seniors in the Army ROTC program. It is conducted outside and allows cadets to apply their classroom skills from MS 401 and MS 402 in a practical environment. This includes planning training events, organizing as a staff, and evaluating our Junior cadets.

Coreqs: MS 401 or MS 402

MS 455 Army Physical Fitness Training IV (1 credit, max 2)

Physical training three days a week is a requirement for all Freshman in the Army ROTC program that are on scholarship or contracted. This program is designed to build and maintain a level of fitness that allows cadets to pass the Army Combat Physical Fitness test, which is a commissioning and scholarship requirement.

Coreqs: MS 401 or MS 402

MS 460 Army Physical Fitness Training V (1 credit, max 2)

Physical training three days a week is a requirement for all fifth-year Seniors in the Army ROTC program that are on scholarship or contracted. This program is designed to build and maintain a level of fitness that allows cadets to pass the Army Combat Physical Fitness test which is a commissioning and scholarship requirement.

Prereqs: MS 455

MS 499 (s) Directed Study (1-16 credits)

Credit arranged

Movement Sciences (MVSC)

MVSC 201 Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles (3 credits)

Examines personal awareness and responsibility for maintenance of health, proper nutrition, fitness, and well-being. It teaches skills necessary for individual program development and implementation to effect positive health-related behavior change.

Prereqs: Major in Dance, Exercise Science and Health, Physical Education Teacher Education or Recreation. Prereqs or

Coreqs: PEP 100, PEP 161, or DAN 101

MVSC 404 (s) Special Topics (1-16 credits)

Credit arranged

MVSC 445 Internship Preparation and Professional Development (1 credit)

This course explores the different factors that go into finding, obtaining, and getting the most out of an internship. Emphasis is placed on such skills related to understanding the student's chosen field/career path, professionalism, communication, and dealing with adversity in the work place.

Prereqs: MVSC 201

MVSC 486 Healthy Active Lifestyle Assessment and Intervention (3 credits)

General Education: Senior Experience

Joint-listed with MVSC 586

Develops skills in leadership, assessment, planning and pedagogy to promote and deliver a healthy active lifestyles intervention for individuals, groups and/or communities. Lecture-lab. Students are required to work with an agency in the field as part of the lab hours.

Prereqs: Junior, Senior or Graduate Student

MVSC 570 Research in Physical Activity, Theory and Design (3 credits)

To understand and apply principles of scientific inquiry using both quantitative and qualitative research methodology; and apply such principles through individual research projects in physical activity.

MVSC 580 Research: Writing and Dissemination (1 credit)

Professional writing of research not directly related to a thesis or dissertation. (Spring only)

Prereqs: MVSC 570

MVSC 586 Healthy Active Lifestyle Assessment and Intervention (3 credits)

Joint-listed with MVSC 486

Develops skills in leadership, assessment, planning and pedagogy to promote and deliver a healthy active lifestyles intervention for individuals, groups and/or communities. Lecture-lab. Students are required to work with an agency in the field as part of the lab hours.

Prereqs: Junior, Senior or Graduate Student

MVSC 610 Pedagogical Immersion in Movement Sciences (1-16 credits)

Credit arranged. This immersion course is designed to guide the learner in developing and improving effective pedagogical skills while teaching coursework to adults in university and/or community settings.

MVSC 611 Outreach and Engagement Immersion in the Movement Sciences (1-16 credits)

Credit arranged This immersion course is designed to guide the learner in participating in and/or developing outreach, engagement and/or service activities to clients, communities, and/or professional organizations.

Prereqs: Instructor Permission

MVSC 612 Research Immersion in the Movement Sciences (1-16 credits)

Credit arranged. The research immersion course is designed as a first exposure to doctoral non-dissertation research and a precursor to non-dissertation research, where the student collaborates with the major professor on implementing research.

Music (MUSI)

MUSI 100 (s) Introduction to Music (3 credits)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

Not open for credit to majors. Introduction to the art and nature of music; emphasis on aural skills, historical styles, musical forms, and the literature of music.

Music - Applied Performance (MUSA)

Vertically-related courses in this subject field are: MUSA 145 - MUSA 146 - MUSA 245 - MUSA 246.

MUSA 114 (s) Studio Instruction (1 credit, max arranged)

For secondary or minor instrument, nonmajors, and undeclared majors; may not be taken for audit. Weekly instruction. Instruction offered in piano, organ, harpsichord, voice, flute, oboe, clarinet, saxophone, bassoon, trumpet, horn, euphonium, trombone, tuba, percussion, violin, viola, cello, contrabass, or guitar. Final exam conducted by jury in some sections. Typically Offered: Fall, Spring, Summer.

Prereqs: Audition or Permission.

MUSA 115 (s) Studio Instruction (2 credits, max 8)

8 max. For music majors. Review of fundamentals of technique and musicianship in preparation for MUSA 124 and MUSA 134. Maximum two semesters on the same instrument. Typically Offered: Fall, Spring, Summer.

Prereqs: Placement audition by committee.

MUSA 116 Concert Choir--Vandaleers (1 credit, max arranged)

Joint-listed with MUSA 316, MUSA 516

Open to all students. Students earning upper division and graduate credits will be held to higher standards. Field trips.

Prereqs: Audition and Permission

MUSA 117 (s) University Choir (1 credit, max arranged)

Joint-listed with MUSA 317, MUSA 517

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 118 (s) Jazz Choir (1 credit, max arranged)

Joint-listed with MUSA 318, MUSA 518

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 119 (s) Marching Band (1-3 credits, max arranged)

Joint-listed with MUSA 319, MUSA 519

Open to all students. Performance at home football games and other events and travel to selected away football games; field trips. Students earning upper division and graduate credits will be held to higher standards. (Fall only)

MUSA 120 (s) Wind Ensemble (1 credit, max arranged)

Joint-listed with MUSA 320, MUSA 520

Maximum credit arranged. Open to all students by audition. Students earning graduate credit will be held to higher standards.

Prereqs: Audition and Permission

MUSA 121 (s) Concert Band (1 credit, max arranged)

Joint-listed with MUSA 321, MUSA 521

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 122 (s) Orchestra (1 credit, max arranged)

Joint-listed with MUSA 322, MUSA 522

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

Prereqs: Audition and Permission

MUSA 123 (s) Jazz Ensemble (1 credit, max arranged)

Joint-listed with MUSA 323, MUSA 523

Open to all students. Students earning graduate credit will be held to higher standards.

Prereqs: Audition and Permission

MUSA 124 (s) Studio Instruction (2 credits, max arranged)

Joint-listed with MUSA 324, MUSA 524

For music majors in music degree programs other than performance; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas. Typically Offered: Fall, Spring, Summer.

Prereqs: Placement audition by committee

MUSA 126 (s) Pep Band (1 credit)

Joint-listed with MUSA 326

Open to all students. Performances at home basketball games and other events. Travel to conference tournament. Recommended Preparation: MUSA 119/MUSA 319/MUSA 519. Typically Offered: Spring.

Prereqs: Audition and Permission

MUSA 134 (s) Studio Instruction (3 credits)

Joint-listed with MUSA 334, MUSA 534

For music majors in the B. Mus. Performance degree; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.

Typically Offered: Fall, Spring and Summer.

Prereqs: Placement audition by committee.

MUSA 145 (s) Piano Class for Music Majors/Minors (1 credit)

May not be taken for audit. The first semester of a four-semester beginning piano sequence. Two lecture-labs per week. (Fall only) Prereq : Major or minor in the School of Music or Permission

MUSA 146 Piano Class for Music Majors/Minors (1 credit)

May not be taken for audit. The second semester of a four-semester beginning piano sequence. Two lecture-labs per week. (Spring only)

Prereq : 'C' or better in MUSA 145 or Permission

MUSA 153 Guitar Class (2 credits)

Group instruction in guitar. May not be taken for audit.

MUSA 180 (s) Opera/Musical Theatre Studio (1-3 credits, max arranged)

Joint-listed with MUSA 380, MUSA 580

Analysis, rehearsal, and performance of operatic and musical theatre literature. Students earning graduate credit will be held to a higher standard.

Prereqs: Audition and Permission

MUSA 200 (s) Seminar (1-16 credits)

Credit arranged

MUSA 203 (s) Workshop (1-16 credits)

Credit arranged

MUSA 204 (s) Special Topics (0-16 credits)

Credit arranged

MUSA 208 Musical Conversation and Improvisation (1 credit)

This course exposes students to the musical aesthetic of improvisation and the many facets of improvising in individual and group contexts in a wide variety of musical styles across the world and throughout history. Topics include listening skills, playing and singing by ear, pattern and scale recognition, theoretical and compositional applications, and development of the creative process. Typically Offered: Fall.

Prereqs: 'C' or better in MUSC 139 and MUSC 141 or Permission

MUSA 210 Jazz Improvisation (2 credits)

Overview of basic jazz improvisation with an emphasis on style and basic jazz theory. (Spring only)

MUSA 212 Introduction to Jazz Piano I (1 credit)

Interpretation of fake books and lead sheets in various styles including swing, blues, ballad, Latin and pop. Emphasis on chord voicings, comping, style, and basic improvisation. Recommended Preparation: Equivalent of 2 years piano instruction.

MUSA 213 Introduction to Jazz Piano II (1 credit)

This course is designed to expand upon styles and techniques learned in Intro to Jazz Piano I.

Prereqs: MUSA 212

MUSA 245 (s) Piano Class for Music Majors/Minors (1 credit)

May not be taken for audit. The third semester of a four-semester beginning piano sequence. Two lecture-labs per week. (Fall only)

Prereqs: 'C' or better in MUSA 146

MUSA 246 Piano Class for Music Majors/Minors (1 credit)

May not be taken for audit. The fourth semester of a four-semester beginning piano sequence. Two lecture-labs per week. (Spring only)

Prereqs: 'C' or better in MUSA 245 or Permission

MUSA 250 (s) Ensemble Attendance (0 credits)

This course documents student participation in ensembles when they are unable to take them for credit. Does not fulfill ensemble requirements for music majors. Graded P/F.

MUSA 299 (s) Directed Study (1-16 credits)

Credit arranged

MUSA 314 (s) Studio Instruction (1 credit, max arranged)

Typically Offered: Fall, Summer and Spring.

Prereqs: Four semesters of MUSA 114, MUSA 124, or MUSA 134 on the same instrument or Permission

MUSA 315 Collaborative Piano (1 credit, max arranged)

Joint-listed with MUSA 515

Principles of collaborative piano; lab assignments under supervision.

Prereqs: Audition and completion of semester of MUSA 124 or MUSA 134

MUSA 316 Concert Choir--Vandaleers (1 credit, max arranged)

Joint-listed with MUSA 116, MUSA 516

Open to all students. Students earning upper division and graduate credits will be held to higher standards. Field trips.

Prereqs: Audition and Permission

MUSA 317 (s) University Chorus (1 credit, max arranged)

Joint-listed with MUSA 117, MUSA 517

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 318 (s) Jazz Choir (1 credit, max arranged)

Joint-listed with MUSA 118, MUSA 518

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 319 (s) Marching Band (1-3 credits, max arranged)

Joint-listed with MUSA 119, MUSA 519

Open to all students. Performance at home football games and other events and travel to selected away football games; field trips. Students earning upper division and graduate credits will be held to higher standards. (Fall only)

MUSA 320 (s) Wind Ensemble (1 credit, max arranged)

Cross-listed with MUSA 520

Joint-listed with MUSA 120

Maximum credit arranged. Open to all students by audition. Students earning graduate credit will be held to higher standards.

MUSA 321 (s) Concert Band (1 credit, max arranged)

Joint-listed with MUSA 121, MUSA 521

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 322 (s) Orchestra (1 credit, max arranged)

Joint-listed with MUSA 122, MUSA 522

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

Prereqs: Audition and Permission

MUSA 323 (s) Jazz Ensemble (1 credit, max arranged)

Joint-listed with MUSA 123, MUSA 523

Open to all students. Students earning graduate credit will be held to a higher standard.

Prereqs: Audition and Permission

MUSA 324 Studio Instruction (2 credits, max 99)

Cross-listed with MUSA 524

Joint-listed with MUSA 124

arranged. For music majors in music degree programs other than performance; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas. Typically Offered: Fall, Spring and Summer.

MUSA 326 Pep Band (1 credit, max 99)

Joint-listed with MUSA 126

Open to all students. Performances at home basketball games and other events. Travel to conference tournament. Recommended Preparation: MUSA 119/MUSA 319/MUSA 519. Typically Offered: Spring.

MUSA 334 (s) Studio Instruction (3 credits, max 99, max arranged)

Joint-listed with MUSA 134, MUSA 534

For music majors in the B. Mus. performance degree; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.

Prereqs: Placement audition by committee

MUSA 365 (s) Chamber Ensemble (1 credit, max arranged)

Joint-listed with MUSA 565

Open to all students. Performance opportunities in chamber ensembles: string, brass, woodwind, percussion, keyboard, vocal, and mixed. Students earning graduate credit will be held to higher standards.

Prereqs: Audition and Permission

MUSA 380 (s) Opera/Musical Theatre Studio (1-3 credits, max arranged)

Joint-listed with MUSA 180, MUSA 580

Analysis, rehearsal, and performance of operatic and musical theatre literature. Students earning graduate credit will be held to higher standards.

Prereqs: Audition and Permission

MUSA 387 Conducting I (2 credits)

Conducting techniques, score reading, and interpretation of scores for large choral and instrumental ensembles. (Fall only)

Prereqs: MUSC 141

MUSA 400 (s) Seminar (1-16 credits)

Credit arranged

MUSA 403 (s) Workshop (1-16 credits)

Credit arranged

MUSA 404 (s) Special Topics (1-16 credits)

Credit arranged

MUSA 410 Advanced Jazz Improvisation (2 credits)

Advanced study of jazz improvisation with an emphasis on advanced jazz theory, transcription, and developing facility in all keys. Additional projects/assignments required for graduate credit. (Fall only)

Prereqs: MUSA 210

MUSA 455 Keyboard Performance Practices (1 credit)

Joint-listed with MUSA 555

Study of interpretation of keyboard music from Baroque through 20th century; learn to interpret scores, teach, and perform keyboard music stylistically; acquire knowledge of major performing artists and recordings from each period of music. Registration for graduate credit requires additional research into original treatises from each period of music, resulting in the editing of a piece of music from each of these periods. (Fall, alt/even years).

MUSA 487 Conducting II (2 credits)

(Spring only)

Prereqs: MUSA 387 or Permission

MUSA 490 Half Recital (0 credits)

General Education: Senior Experience

For students required to have one-half recital.

MUSA 491 Recital (0 credits)

General Education: Senior Experience

For students required to have a full recital. May be repeated.

MUSA 492 Elective Half Recital (0 credits)

For students who wish to present an elective half recital. Graded P/F.

Prereqs: Audition and Permission

Coreqs: MUSA 324 or MUSA 334

MUSA 493 Elective Recital (0 credits)

For students who wish to present an elective full recital. Graded P/F.

Prereqs: Audition and Permission

Coreqs: MUSA 324 or MUSA 334

MUSA 499 (s) Directed Study (1-16 credits)

Credit arranged

MUSA 500 Master's Research and Thesis (1-16 credits)

Credit arranged

MUSA 501 (s) Seminar (1-16 credits)

Credit arranged

MUSA 502 (s) Directed Study (1-16 credits)

Credit arranged

MUSA 503 (s) Workshop (1-16 credits)

Credit arranged

MUSA 504 (s) Special Topics (1-16 credits)

Credit arranged

MUSA 505 (s) Professional Development (1-16 credits)

Credit arranged

MUSA 514 (s) Studio Instruction (1 credit, max arranged)

Typically Offered: Fall, Summer and Spring.

MUSA 515 Collaborative Piano (1 credit, max arranged)

Joint-listed with MUSA 315

Principles of collaborative piano; lab assignments under supervision.

Prereqs: Audition and completion of semester of MUSA 124 or MUSA 134

MUSA 516 Concert Choir--Vandaleers (1 credit, max arranged)

Joint-listed with MUSA 116, MUSA 316

Open to all students. Students earning upper division and graduate credits will be held to higher standards. Field trips.

Prereqs: Audition and Permission

MUSA 517 (s) University Chorus (1 credit, max arranged)

Joint-listed with MUSA 117, MUSA 317

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 518 (s) Jazz Choir (1 credit, max arranged)

Joint-listed with MUSA 118, MUSA 318

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 519 (s) Marching Band (1-3 credits, max arranged)

Joint-listed with MUSA 119, MUSA 319

Open to all students. Performance at home football games and other events and travel to selected away football games; field trips. Students earning upper division and graduate credits will be held to higher standards. (Fall only)

MUSA 520 (s) Wind Ensemble (1 credit, max arranged)

Cross-listed with MUSA 320

Joint-listed with MUSA 120

Maximum credit arranged. Open to all students by audition. Students earning graduate credit will be held to higher standards.

MUSA 521 (s) Concert Band (1 credit, max arranged)

Joint-listed with MUSA 121, MUSA 321

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

MUSA 522 (s) Orchestra (1 credit, max arranged)

Joint-listed with MUSA 122, MUSA 322

Open to all students. Students earning upper division and graduate credits will be held to higher standards.

Prereqs: Audition and Permission

MUSA 523 (s) Jazz Ensemble (1 credit, max arranged)

Joint-listed with MUSA 123, MUSA 323

Open to all students. Students earning graduate credit will be held to a higher standard.

Prereqs: Audition and Permission

MUSA 524 Studio Instruction (2 credits, max 99)

Cross-listed with MUSA 324

Joint-listed with MUSA 124

arranged. For music majors in music degree programs other than performance; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas. Typically Offered: Fall, Spring and Summer.

MUSA 534 (s) Studio Instruction (3 credits, max 99, max arranged)

Joint-listed with MUSA 134, MUSA 334

. For music majors in the B. Mus. Performance degree; may not be taken for audit. Weekly instruction plus convocation/area recital/studio class; final exam conducted by jury. See MUSA 114 for instruction areas.

Prereqs: Placement audition by committee

MUSA 555 Keyboard Performance Practices (1 credit)

Joint-listed with MUSA 455

Study of interpretation of keyboard music from Baroque through 20th century; learn to interpret scores, teach, and perform keyboard music stylistically; acquire knowledge of major performing artists and recordings from each period of music. Registration for graduate credit requires additional research into original treatises from each period of music, resulting in the editing of a piece of music from each of these periods. (Fall, alt/even years).

MUSA 565 (s) Chamber Ensemble (1 credit, max arranged)

Joint-listed with MUSA 365

Open to all students. Performance opportunities in chamber ensembles: string, brass, woodwind, percussion, keyboard, vocal, and mixed. Students earning graduate credit will be held to higher standards.

Prereqs: Audition and Permission

MUSA 580 (s) Opera/Musical Theatre Studio (1-3 credits, max arranged)

Joint-listed with MUSA 180, MUSA 380

Analysis, rehearsal, and performance of operatic and musical theatre literature. Students earning graduate credit will be held to higher standards.

Prereqs: Audition and Permission

MUSA 587 (s) Advanced Conducting (1-2 credits, max arranged)

Advanced score study, baton technique, expressive gestures for conductors.

Prereqs: Undergraduate conducting course

MUSA 591 (s) Required Master's Recital (0 credits)

For students whose emphasis is in performance. May be repeated. Graded P/F.

Prereqs: Audition and Permission of committee

Coreqs: MUSA 524 or MUSA 534

MUSA 592 Final Master's Project (0 credits)

Students in the Master of Music with a concentration in performance are required to write a document or present a lecture recital. Graded P/F.

Prereqs: Permission of Committee

MUSA 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Music - Composition and Theory (MUSC)

MUSC 139 Aural Skills I (2 credits)

Exercises and drill in sight-singing and ear training. Three lecture-labs per week. Recommended (Fall only)

Prereqs: Permission

Coreqs: MUSA 145

MUSC 140 Aural Skills II (2 credits)

Exercises and drill in sight-singing and ear training. Three lecture-labs per week. Recommended (Spring only)

Prereqs: 'C' or better in MUSC 139

Coreqs: MUSA 146

MUSC 141 Theory of Music I (2 credits)

Melodic and harmonic materials, part-writing skills, and analysis. (Fall only)

Prereqs: Permission

MUSC 142 Theory of Music II (2 credits)

Harmonic materials, part-writing skills, and analysis. (Spring only)

Prereqs: 'C' or better in MUSC 141 or Permission

MUSC 200 (s) Seminar (1-16 credits)

Credit arranged

MUSC 203 (s) Workshop (1-16 credits)

Credit arranged

MUSC 204 (s) Special Topics (1-16 credits)

Credit arranged

MUSC 225 Composition (2 credits, max arranged)

Joint-listed with MUSC 425, MUSC 525

For Music Majors. The craft of musical composition, using original composition assignments to focus on common techniques used by past and contemporary composers and to develop skill in notation. Active participation and performance is emphasized. MUSC 425 and MUSC 525 increasingly emphasize varied media and larger forms, but with value being placed on creativity and originality. In MUSC 425 and MUSC 525, class meetings are supplemented by private lessons.

Prereqs or Coreqs: MUSC 141 or Permission

MUSC 239 Aural Skills III (2 credits)

Continuation of MUSC 140. Two lecture-labs per week. Recommended co-requisite or prerequisite, MUSC 245. Typically Offered: Fall.

Prereqs: 'C' or better in MUSC 139 and MUSC 140

Coreqs: MUSA 241

MUSC 240 Aural Skills IV (2 credits)

Typically Offered: Spring.

Prereqs: 'C' or better in MUSC 239

Coreqs: MUSC 242

MUSC 241 Theory of Music III (2 credits)

A continuation of MUSC 142, Music Theory III is a foundation for advanced study in music and improves all aspects of musicianship.

This curriculum covers the basic elements of pitch and rhythm, chord identification and function, voice-leading principles, harmonic progressions, and analysis of diatonic music. Typically Offered: Fall.

Prereqs: 'C' or better in MUSC 142

MUSC 242 Theory Of Music IV (2 credits)

A continuation of MUSC 241, Music Theory IV is the final semester of the core theory sequence and focuses on advanced harmony and notation.

This curriculum covers non-primary functions in diatonic harmony, chromatic harmony, modulations and mode mixture, a basic overview of large-scale form, and an introduction to 20th century tonal and post-tonal harmony. Typically Offered: Spring.

Prereqs: 'C' or better in MUSC 241

MUSC 299 (s) Directed Study (1-16 credits)

Credit arranged

MUSC 328 Instrumental and Choral Arranging (2 credits)

Principles of instrumentation, transcription, and arranging with emphasis on idiomatic instrumental and choral writing leading to projects in scoring for chamber, band, orchestral, and vocal ensembles. (Spring only)

Prereqs: 'C' or better in MUSC 242

MUSC 329 Theoretical Basis of Jazz (2 credits)

Harmonic, melodic, rhythmic, and stylistic analysis of principal trends. Typically Offered: Fall.

Prereqs: MUSC 141 or Permission

MUSC 331 Counterpoint (3 credits)

Style and technique of polyphonic 16th century vocal music through 18th century instrumental music, with emphasis on two- to three-part writing; motet, canon, invention, and fugue. Typically Offered: Fall.

Prereqs: 'C' or better in MUSC 242 or Permission

MUSC 400 (s) Seminar (1-16 credits)

Credit arranged

MUSC 403 (s) Workshop (1-16 credits)

Credit arranged

MUSC 404 (s) Special Topics (1-16 credits)

Credit arranged

MUSC 424 Electronic Music I (2 credits)

The science of sound and basics of digital audio production. Typically Offered: Spring.

MUSC 425 Composition (2 credits, max arranged)

Joint-listed with MUSC 225, MUSC 525

For Music Majors. The craft of musical composition, using original composition assignments to focus on common techniques used by past and contemporary composers and to develop skill in notation. Active participation and performance is emphasized. MUSC 425 and MUSC 525 increasingly emphasize varied media and larger forms, but with value being placed on creativity and originality. In MUSC 425 and MUSC 525, class meetings are supplemented by private lessons.

Prereqs or Coreqs: MUSC 141 or Permission

MUSC 426 Electronic Music II (2 credits)

Techniques of musical composition using electronic media. Typically Offered: Varies.

Prereqs: MUSC 424 or Permission

MUSC 442 Musical Analysis (2 credits)

Study of traditional forms and analytical techniques. (Spring only)

Prereqs: MUSC 242

MUSC 490 Senior Recital (0 credits)

General Education: Senior Experience

For students in composition required to have a full recital.

MUSC 499 (s) Directed Study (1-16 credits)

Credit arranged

MUSC 500 Master's Research and Thesis (1-16 credits)

Credit arranged

MUSC 501 (s) Seminar (1-16 credits)

Credit arranged

MUSC 502 (s) Directed Study (1-16 credits)

Credit arranged

MUSC 503 (s) Workshop (1-16 credits)

Credit arranged

MUSC 504 (s) Special Topics (1-16 credits)

Credit arranged

MUSC 505 (s) Professional Development (1-16 credits)

Credit arranged

MUSC 521 Musical Analysis (3 credits)

Analysis of selected musical compositions.

Prereqs: Permission

MUSC 525 Composition (2 credits, max arranged)

Joint-listed with MUSC 225, MUSC 425

For Music Majors. The craft of musical composition, using original composition assignments to focus on common techniques used by past and contemporary composers and to develop skill in notation. Active participation and performance is emphasized. MUSC 425 and MUSC 525 increasingly emphasize varied media and larger forms, but with value being placed on creativity and originality. In MUSC 425 and MUSC 525, class meetings are supplemented by private lessons.

Prereqs or Coreqs: MUSC 141 or Permission

MUSC 590 (s) Master's Comp Recital (0 credits)

For students whose degree requires a composition recital as part of the degree requirements. Graded P/F.

Prereqs: Audition and Permission of committee

Coreqs: MUSC 525

MUSC 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Music - General (MUSX)

MUSX 101 Orientation for Music Majors (0 credits)

An orientation to requirements, processes, and opportunities associated with the study of music as a discipline for new students in the School of Music; a foundation for success and survival in the study of music. Graded P/F.

MUSX 140 Recital Attendance (0 credits)

Students will attend five Lionel Hampton School of Music (LHSOM) Convocations, five faculty/guest recitals, and five other music performances. Graded P/F.

MUSX 200 (s) Seminar (1-16 credits)

Credit arranged

MUSX 203 (s) Workshop (1-16 credits)

Credit arranged

MUSX 204 (s) Special Topics (1-16 credits)

Credit arranged

MUSX 250 Introduction to Career Skills in Music (2 credits)

This course exposes music majors to career opportunities and pathways in the field of music and associated careers such as (but not limited to) recording engineering, librarian, instrument instruction, orchestral performance, and chamber music management. Students will explore professional skills such as preparing for and taking auditions, practice strategies, private lesson policies and procedures, social media promotion, and recording technology. Typically Offered: Fall.

MUSX 283 (s) Italian and German Diction for Singers (2 credits)

The first semester in a yearlong sequence of study of the use of the International Phonetic Alphabet for singing. This course covers the phonetic symbols and diction rules for Italian and German. Typically Offered: Fall.

Prereqs: Music Major or Permission

MUSX 284 (s) French and English Diction for Singers (2 credits)

Continuation of the study of the use of the International Phonetic Alphabet for singing. This course covers the phonetic symbols and diction rules for French and English. Typically Offered: Spring.

Prereqs: 'C' or better in MUSX 283

MUSX 298 (s) Internship (1-3 credits, max arranged)

Open to all students. Graded P/F.

Prereqs: Permission

MUSX 299 (s) Directed Study (1-16 credits)

Credit arranged

MUSX 320 Alexander Technique I (1 credit)

Joint-listed with MUSX 520

An active and scholarly exploration of the Alexander Technique. Participants will discover how their habits of movement are interfering with their overall coordination. The purpose of this course is to unlock creativity, discover freedom and ease in performance, reduce stress and tension throughout the body, and prevent performance related injuries.

MUSX 330 Continuing Studies in the Alexander Technique (1 credit, max arranged)

Joint-listed MUSX 530. Continuation of study of the Alexander Technique for musicians, actors and dancers.

Prereqs: MUSX 320 or MUSX 520.

MUSX 350 Co-Op Professional Seminar (1 credit)

This course corresponds with the Co-Op and offers the students time to meet together digitally to share, discuss, and troubleshoot concerns as they arise during their Co-Op.

Prereqs: Upper Division Standing

MUSX 400 (s) Seminar (1-16 credits)

Credit arranged

MUSX 403 (s) Workshop (1-16 credits)

Credit arranged

MUSX 404 (s) Special Topics (1-16 credits)

Credit arranged

MUSX 410 Current Topics in Music Business (3 credits)

This course will focus on the current topics and trends common to the many areas that fall under the umbrella of Music Business. Topics will include: career niches and opportunities, press kit/introduction materials (bios, resume, CV, cover letters, business cards, headshots), the audition process, touring, branding, marketing and advertising oneself or a group, copyright laws, publications, social media and online presence, taxes, and professional ethics. (Fall, alt/even years)

MUSX 498 (s) Internship (1-16 credits)

Credit arranged. Open to all juniors and seniors and graduate students.

Graded P/F.

Prereqs: Permission

MUSX 499 (s) Directed Study (1-16 credits)

Credit arranged

MUSX 500 Master's Research and Thesis (1-16 credits)

Credit arranged

MUSX 501 (s) Seminar (1-16 credits)

Credit arranged

MUSX 502 (s) Directed Study (1-16 credits)

Credit arranged

MUSX 503 (s) Workshop (1-16 credits)

Credit arranged

MUSX 504 (s) Special Topics (1-16 credits)

Credit arranged

MUSX 511 Bibliography and Research (3 credits)

Orientation to graduate study; bibliography and research procedures.

Prereqs: Admission to graduate program or Permission

MUSX 520 Alexander Technique I (1 credit)

Joint-listed with MUSX 320

An active and scholarly exploration of the Alexander Technique. Participants will discover how their habits of movement are interfering with their overall coordination. The purpose of this course is to unlock creativity, discover freedom and ease in performance, reduce stress and tension throughout the body, and prevent performance related injuries.

MUSX 530 Continuing Studies in the Alexander Technique (1 credit, max arranged)

Joint-listed MUSX 330. Continuation of study of the Alexander Technique for musicians, actors and dancers.

Prereqs: MUSX 320 or MUSX 520.

MUSX 598 (s) Internship (1-16 credits)

Credit arranged

MUSX 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Music - History and Literature (MUSH)

MUSH 104 Jazz: An African American Art Form (3 credits)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

Grammy Museum Affiliate Series. Using current trends in jazz as a starting point, this course examines major innovators and styles in the history and origins of this African American art form and explores the cultural, societal and political impact of this music on America's collective consciousness. Not open for credit to music majors. Typically Offered: Spring.

MUSH 106 Women in American Popular Music (3 credits)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

Grammy Museum Affiliate Series. This course highlights and celebrates women who have played prominent roles in American popular music, including blues, country, funk, hip hop, pop, and rhythm and blues. Topics include the history of popular music, the inner workings of the commercial music industry, and gender bias and gender roles in the music industry. Not open for credit to music majors. Typically Offered: Fall.

MUSH 108 Music of the World (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

This course introduces music cultures outside Western art and popular music traditions. Discussions focus on the sound of diverse music traditions of the world, their aesthetic foundations, relation to social and cultural contexts, historical development, and cross-cultural interactions and influences. Typically Offered: Fall and Spring.

MUSH 111 Introduction to the World of Music (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Musical styles and approaches in multiple societies, with an emphasis on listening to, thinking about, researching, and writing about a wide variety of music. Typically Offered: Spring.

MUSH 200 (s) Seminar (1-16 credits)

Credit arranged

MUSH 201 History of Rock and Roll (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

A study of the history and culture of rock music. May not be counted as a required music history elective for music majors.

MUSH 203 (s) Workshop (1-16 credits)

Credit arranged

MUSH 204 (s) Special Topics (1-16 credits)

Credit arranged

MUSH 299 (s) Directed Study (1-16 credits)

Credit arranged

MUSH 321 Music in Society I (3 credits)

Musical cultures, styles, and genres from Antiquity to 1800. Typically Offered: Fall.

Prereqs: 'C' or better in MUSH 111 Prereqs or

Coreqs: MUSC 141

MUSH 322 Music in Society II (3 credits)

Musical cultures, styles, and genres from 1800 to the present. Typically Offered: Spring.

Prereqs: 'C' or better in MUSC 141 and MUSH 111

MUSH 400 (s) Seminar (1-16 credits)

Credit arranged

MUSH 403 (s) Workshop (1-16 credits)

Credit arranged

MUSH 404 (s) Special Topics (1-16 credits)

Credit arranged

MUSH 410 (s) Studies in Jazz History (3 credits)

General Education: American Diversity

Joint-listed with MUSH 510

Selected topics in jazz. Additional projects/assignments required for graduate credit.

MUSH 418 Studies in Classic/Romantic Music (3 credits)

Joint-listed with MUSH 518

Selected topics in Classic/Romantic music. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

Prereqs: MUSH 321 and MUSH 322

MUSH 419 Studies in Music Since 1900 (3 credits)

Joint-listed with MUSH 519

Selected topics in music since 1900. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

Prereqs: MUSH 321 and MUSH 322

MUSH 420 Studies in World Music (3 credits)

General Education: International

Joint-listed with MUSH 520

Gen Ed: International Selected topics in the music of world cultures.

Additional projects/assignments required for graduate credit. (Spring, alt/odd years)

Prereqs: MUSH 321 and MUSH 322; or Permission

MUSH 430 History of Musical Theatre (3 credits)

Joint-listed with MUSH 530

A study of the development of American musical theatre. Students will analyze the forms and styles of representative works. Additional projects/assignments required for graduate credit. (Spring, alt/even years)

MUSH 431 History of Opera (3 credits)

Joint-listed with MUSH 531

The history of opera, from its inception (around 1600) to the present, with an exploration of the major national styles and genres. Additional projects/assignments required for graduate credit. (Fall, alt/odd years)

Prereqs: Junior standing and Permission**MUSH 451 (s) Repertoire (2 credits, max arranged)**

Joint-listed with MUSH 551

May be repeated for credit as content changes. Historical and analytical survey of literature available in all performing media. Additional projects/assignments required for graduate credit.

Prereqs: Junior standing and Permission**MUSH 452 Solo Vocal Repertoire (2 credits)**

Historical and analytical survey of solo vocal literature. (Fall, alt/even years)

Prereqs: Permission**MUSH 454 Keyboard Repertoire I (2 credits)**

Joint-listed with MUSH 554

Content will cover the development of keyboard literature from J. S. Bach through Beethoven. Additional projects/assignments required for graduate credit. (Fall, alt/odd years)

Prereqs: Permission**MUSH 455 Keyboard Repertoire II (2 credits)**

Joint-listed with MUSH 555

Content will cover the development of keyboard literature from Schubert to present. Additional projects/assignments required for graduate credit. (Spring, alt/even years)

Prereqs: Permission**MUSH 499 (s) Directed Study (1-16 credits)**

Credit arranged

MUSH 500 Master's Research and Thesis (1-16 credits)

Credit arranged

MUSH 501 (s) Seminar (1-16 credits)

Credit arranged (Spring, even years online, odd years on-campus)

MUSH 502 (s) Directed Study (1-16 credits)

Credit arranged

MUSH 503 (s) Workshop (1-16 credits)

Credit arranged

MUSH 504 (s) Special Topics (1-16 credits)

Credit arranged

MUSH 510 (s) Studies in Jazz History (3 credits, max 99)

General Education: American Diversity

Joint-listed with MUSH 410

Selected topics in jazz. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

MUSH 518 Studies in Classic/Romantic Music (3 credits)

Joint-listed with MUSH 418

Selected topics in Classic/Romantic music. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

MUSH 519 Studies in Music Since 1900 (3 credits)

Joint-listed with MUSH 419

Selected topics in music since 1900. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

MUSH 520 Studies in World Music (3 credits)

Joint-listed with MUSH 420

Selected topics in the music of world cultures. Additional projects/assignments required for graduate credit. (Spring, alt/odd years)

Prereqs: MUSH 321, MUSH 322, and MUSH 323; or Permission**MUSH 530 History of Musical Theatre (3 credits)**

Joint-listed with MUSH 430

A study of the development of American musical theatre. Students will analyze the forms and styles of representative works. Additional projects/assignments required for graduate credit. (Spring, alt/even years)

MUSH 531 History of Opera (3 credits)

Joint-listed with MUSH 431

The history of opera, from its inception (around 1600) to the present, with an exploration of the major national styles and genres. Additional projects/assignments required for graduate credit. (Fall, alt/odd years)

MUSH 551 (s) Repertoire (2 credits, max arranged)

Joint-listed with MUSH 451

May be repeated for credit as content changes. Historical and analytical survey of literature available in all performing media. Additional projects/assignments required for graduate credit.

MUSH 554 Keyboard Repertoire I (2 credits)

Joint-listed with MUSH 454

Content will cover the development of keyboard literature from J. S. Bach through Beethoven. Additional projects/assignments required for graduate credit. (Fall, alt/odd years)

Prereqs: Permission**MUSH 555 Keyboard Repertoire II (2 credits)**

Joint-listed with MUSH 455

Content will cover the development of keyboard literature from Schubert to present. Additional projects/assignments required for graduate credit. (Spring, alt/even years)

Prereqs: Permission**MUSH 556 Choral Literature I (2 credits)**

Historical and analytical survey of choral literature from the early Renaissance through Classical era. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

MUSH 557 Choral Literature II (2 credits)

Historical and analytical survey of choral literature from the Romantic through Contemporary era. Prereq MUSH 556

MUSH 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Music - Teaching (MUST)

MUST 200 (s) Seminar (1-16 credits)

Credit arranged

MUST 203 (s) Workshop (1-16 credits)

Credit arranged

MUST 204 (s) Special Topics (1-16 credits)

Credit arranged

MUST 251 String Instrument Techniques (1 credit)

Group instruction. Fundamental techniques and pedagogy for bowed string instruments and guitar in elementary and secondary schools. Typically Offered: Fall.

Prereqs: Permission

MUST 253 Brass Instrument Techniques (1 credit)

Group instruction. Problems of playing and teaching brass instruments in elementary and secondary schools. (Spring only)

Prereqs: Permission

MUST 254 Percussion Techniques (1 credit)

Group instruction. Problems of playing and teaching percussion instruments in elementary and secondary schools. (Spring only)

Prereqs: Permission

MUST 255 Woodwind Techniques (1 credit)

Group instruction. Pedagogy of playing and teaching bassoon, clarinet, flute, oboe, and saxophone in elementary and secondary schools.

Typically Offered: Spring.

Prereqs: Permission

MUST 256 String Pedagogy and Orchestral Literature (1 credit)

Pedagogy for bowed string instruments, including a survey of orchestral method books for use in elementary and secondary schools. Typically Offered: Spring.

Prereqs: MUST 251

MUST 283 Principles of Music Teaching (3 credits)

Philosophy, principles, curriculum, and organization of the school music program; world music pedagogy; teaching cultural diverse learners. Typically Offered: Fall.

MUST 299 (s) Directed Study (1-16 credits)

Credit arranged

MUST 382 Elementary Music Methods and Literacy (3 credits)

Joint-listed with MUST 582

Curriculum design, instructional materials, and methodologies (including Orff, Kodaly and Dalcroze approaches) for teaching general music and literacy related to music in grades K-6. Practicum - five field-teaching experiences must be scheduled in general music classrooms outside of class time. Additional course requirements for graduate students. Typically Offered: Spring.

Prereqs: EDCI 201 and MUST 283; or Permission

MUST 385 Choral Music in the Secondary School (3 credits)

Joint-listed with MUST 584

Methods, instructional materials, rehearsal techniques and techniques for teaching choral music in grades 7-12. Includes practicum hours. Additional work required for graduate level credit. Typically Offered: Fall (Odd Years).

Prereqs: 1 credit in MUSA 116 or MUSA 316 or 1 credit in MUSA 117 or MUSA 317.

Prereqs or Coreqs: 1 additional credit in MUSA 116 or MUSA 316 or 1 credit in MUSA 117 or MUSA 317; and MUST 283; and MUSA 387; or Permission

MUST 386 Instrumental Music in the Secondary Schools (3 credits)

Joint-listed with MUST 587

Methods, instructional materials, rehearsal techniques and techniques for teaching instrumental music in grades 7-12. Includes practicum hours. Additional work required for graduate level credit. Typically Offered: Spring.

Prereqs: MUSC 142 and MUST 283 Prereqs or

Coreqs: MUSA 387 or Permission

MUST 400 (s) Seminar (1-16 credits)

Credit arranged

MUST 403 (s) Workshop (1-16 credits)

Credit arranged

MUST 404 (s) Special Topics (1-16 credits)

Credit arranged

MUST 405 (s) Professional Development (1-16 credits)

Credit arranged

MUST 432 (s) Practicum: Music Teaching (11 credits)

General Education: Senior Experience

Supervised music teaching in public schools. Graded P/F. Graded Pass/Fail.

Prereqs: Successful completion of all required course work for the Music Education: Vocal or Instrumental major, cumulative GPA of 2.75, acceptance to the College of Education, and permission of the School of Music.

Coreqs: MUST 445

MUST 435 (s) Pedagogy & Materials (2 credits, max arranged)

Joint-listed with MUST 535

Methods and materials of performance techniques for each performance field. Additional projects/assignments required for graduate credit. (Vocal Pedagogy – Spring, alt/odd years)

Prereqs: Permission

MUST 436 Pedagogy and Materials: Keyboard I (2 credits)

Joint-listed with MUST 536

Objectives and goals of teaching the beginning piano student in regards to business aspects, literature and techniques. Additional projects/assignments required for graduate credit. (Fall, alt/even years)

Prereqs: Permission

MUST 437 Pedagogy and Materials: Keyboard II (2 credits)

Joint-listed with MUST 537

Objectives and goals of teaching the intermediate and early advanced piano student in regards to literature and techniques. Additional projects/assignments required for graduate credit. (Spring, alt/odd years)

Prereqs: Permission

MUST 438 (s) Practicum (1-16 credits)

Credit arranged. Studio and classroom teaching of secondary music majors, minors, or electives.

MUST 445 Proseminar in Music Teaching (1 credit)

Coreqs: MUST 432

MUST 465 Jazz Band Rehearsal Techniques (2 credits)

Methods, materials, and literature for jazz bands in public schools. (Spring only)

Prereqs or Coreqs: MUST 383 Coreq: MUSA 323

MUST 466 Marching Band Techniques (1 credit)

Techniques of drilling; materials for field and street maneuvers; preparation of shows. (Fall only)

Prereqs: MUSC 142

Prereqs or Coreqs: MUSA 119/MUSA 319; or Permission

MUST 499 (s) Directed Study (1-16 credits)

Credit arranged

MUST 500 Master's Research and Thesis (1-16 credits)

Credit arranged

MUST 501 (s) Seminar (1-16 credits)

Credit arranged

MUST 502 (s) Directed Study (1-16 credits)

Credit arranged

MUST 503 (s) Workshop (1-16 credits)

Credit arranged

MUST 504 (s) Special Topics (1-16 credits)

Credit arranged

MUST 505 (s) Professional Development (1-16 credits)

Credit arranged. Scope and sequence of musical experience in public schools through curriculum development.

MUST 514 Multicultural Music Education (3 credits)

Overview of historical, philosophical, cultural, and pedagogical issues in multicultural music education. Emphasis on the development of knowledge that will inform and enhance instructional practice. Online only. (Spring, alt/odd years)

MUST 535 (s) Pedagogy & Materials (2 credits, max arranged)

Joint-listed with MUST 435

Methods and materials of performance techniques for each performance field. Additional projects/assignments required for graduate credit. (Vocal Pedagogy – Spring, alt/odd years)

Prereqs: Permission**MUST 536 Pedagogy and Materials: Keyboard I (2 credits)**

Joint-listed with MUST 436

Objectives and goals of teaching the beginning piano student in regards to business aspects, literature and techniques. Additional projects/ assignments required for graduate credit. (Fall, alt/even years)

Prereqs: Permission**MUST 537 Pedagogy and Materials: Keyboard II (2 credits)**

Joint-listed with MUST 437

Objectives and goals of teaching the intermediate and early advanced piano student in regards to literature and techniques. Additional projects/ assignments required for graduate credit. (Spring, alt/odd years)

Prereqs: Permission**MUST 538 (s) Practicum (1-16 credits)**

Credit arranged. Studio and classroom teaching of secondary music majors, minors, or electives.

MUST 582 Elementary Music Methods and Literacy (3 credits)

Joint-listed with MUST 382

Curriculum design, instructional materials, and methodologies (including Orff, Kodaly and Dalcroze approaches) for teaching general music and literacy related to music in grades K-6. Practicum - five field-teaching experiences must be scheduled in general music classrooms outside of class time. Additional course requirements for graduate students. Typically Offered: Spring.

Prereqs: EDCI 201 and MUST 283; or Permission**MUST 584 Choral Music in the Secondary School (3 credits)**

Joint-listed with MUST 385

Methods, instructional materials, rehearsal techniques and techniques for teaching choral music in grades 7-12. Includes practicum hours. Additional work required for graduate level credit. Typically Offered: Fall (Odd Years). Prereqs or

Coreqs: 1 additional credit in MUSA 116/MUSA 316 or 1 credit in MUSA 117/MUSA 317; and MUST 283; and MUSA 387; or Permission**MUST 587 Instrumental Music in the Secondary Schools (3 credits)**

Joint-listed with MUST 386

Methods, instructional materials, rehearsal techniques and techniques for teaching instrumental music in grades 7-12. Includes practicum hours. Additional work required for graduate level credit. Typically Offered: Spring.

Prereqs: MUSC 142 and MUST 283**Prereqs or Coreqs:** MUSA 387 or Permission**MUST 598 (s) Internship (1-16 credits)**

Credit arranged

MUST 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Natural Resources (NR)

NR 101 Exploring Natural Resources (2 credits)

Introduction to the interdisciplinary fields and professions in natural resources. Includes field trips. (Fall only)

NR 200 (s) Seminar (1-16 credits)

Credit arranged

NR 203 (s) Workshop (1-16 credits)

Credit arranged

NR 204 (s) Special Topics (1-16 credits)

Credit arranged

NR 211 Undergrad Research Experience I (2 credits)

Introduction to the scientific method in natural resources and environmental sciences, including ethics as it applies to research. Students are selected through an application process and are provided a budget to pursue a research topic of interest. Depending on project, student may participate in trips and laboratory study.

Prereqs: Major in College of Natural Resources and instructor permission.**NR 212 Undergrad Research Experience II (1 credit)**

Continuation of NR 211. Focus on describing data and various methods of reporting research results. Depending on project, student may participate in field trips and laboratory study. Participation in UI Undergraduate Research Symposium is expected.

Prereqs: NR 211**NR 213 Indigenous Science Ways of Knowing (3 credits)**

Broad introduction to Indigenous Science, Traditional Ecological Knowledge (TEK), Indigenous Knowledge (IK), and the ways in which it is transmitted, shared, and protected with emphasis on understanding inherent relational and ethical aspects of Indigenous Knowledges in Indigenous communities and research contexts. Understand contemporary applications of Indigenous Science, TEK, and IK as integrated with Western scientific methods toward natural systems management and the ethical considerations of implementation. Application of Indigenous science and methods will be applied through a semester-long project using a common data set. Typically Offered: Fall.

NR 299 (s) Directed Study (1-16 credits)

Credit arranged

NR 300 Ecology and Conservation Biology Thesis Seminar (1 credit)

A survey of issues related to professional development and thesis preparation in the field of Ecology and Conservation Biology.

Prereqs: Instructor Permission**NR 321 Ecology (3 credits)**

Fundamental principles of the science of ecology. Major topics covered by the course include the physical environment, how organisms interact with each other and their environment, evolutionary processes, population dynamics, communities, energy flow and ecosystems, human influences on ecosystems, and the integration and scaling of ecological processes through systems ecology. Computer-based materials are used extensively for guided independent learning of ecology. Course information: EcologyOnline. net. Recommended Preparation: Introductory botany and zoology.

Prereqs: Introductory Biology or Permission

NR 322 Field Ecology (2 credits)

Introduction to field methods in the science of ecology. This field course, offered in the Frank Church River of No Return Wilderness, emphasizes a unique outdoor experience for ecological observations and understanding. Methods for monitoring and ecological assessment will include experimental design, use of instruments for data collection, and data analysis.

Prereqs: BIOL 102 and BIOL 102L, BIOL 114, BIOL 115, BIOL 115L or Permission

Coreqs: NR 321

NR 325 Community Ecology (3 credits)

Course examines major themes of community ecology, including structure, trophic dynamics, succession, complex interactions among species, herbivory, evolution, and coevolution. Course uses case histories of well-studied aquatic and terrestrial systems. Typically Offered: Fall.

Prereqs: FOR 221/WLF 220

NR 326 Ecosystem Ecology (3 credits)

Course focuses on understanding the physical, chemical, and biological processes regulating the dynamics of terrestrial and aquatic ecosystems. Includes discussion of classic and current topics in aquatic and terrestrial ecology that have established our understanding of ecosystem organization and function, integrating across disciplines of physiological, microbial, population, and community ecology to understand how and why ecosystems differ in composition, structure, and function, and how ecosystems change over time. Typically Offered: Spring.

Prereqs: FOR 221/WLF 220

NR 400 (s) Seminar (1-16 credits)

Credit arranged

NR 403 (s) Workshop (1-16 credits)

Credit arranged

NR 404 (s) Special Topics (1-16 credits)

Credit arranged

NR 405 (s) Professional Development (1-16 credits)

Credit arranged

NR 406 Teaching Assistant Practicum (1-2 credits)

Instructional and other classroom assistance for NR 101 performed by students under faculty supervision.

Prereqs: Permission

NR 497 Senior Thesis (1-3 credits, max 3)

Independently plan and conduct a thesis project; write and defend the thesis under supervision of a supervisor.

Prereqs: Senior standing and Permission

NR 498 (s) Internship (1-16 credits)

Credit arranged

NR 499 (s) Directed Study (1-16 credits)

Credit arranged. For the individual student; conferences, library, field, or lab work.

NR 501 (s) Seminar (1-16 credits)

Credit arranged. Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.

NR 502 (s) Directed Study (1-16 credits)

Credit arranged

NR 503 (s) Workshop (1-16 credits)

Credit arranged Selected topics in the conservation and management of natural resources.

Prereqs: Permission

NR 504 (s) Special Topics (1-16 credits)

Credit arranged

NR 505 Advanced GIS Applications in Wildlife Sciences (1 credit)

Advanced wildlife GIS applications focusing on spatial home range computations and habitat studies; accelerated.

Prereqs: GIS experience or Permission

NR 525 Scientific Graphics Design (3 credits)

Principles of graphics design for science, including the graphical presentation of data for printed and electronic journals, poster presentations, and oral presentations. Students will analyze published scientific graphics as well as learn to design their own graphs based on data from their graduate research or other sources.

NR 598 (s) Internship (1-16 credits)

Credit arranged

NR 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

NR 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Prereqs: Admission to the doctoral program in Natural Resources and Department Permission

Natural Resources and Society (NRS)

NRS 125 Introduction to Conservation and Natural Resources (3 credits)

General Education: Social and Behavioral Ways of Knowing
Foundations of natural resource management and agencies with responsibility for land management; philosophical, theoretical, and historical basis for protected areas; principles and frameworks for managing human use of and recreation on public lands.

NRS 200 (s) Seminar (1-16 credits)

Credit arranged

NRS 201 Introduction to Natural Resource Enterprise Management (2 credits)

Provides an introduction to private sector Natural Resource Management and the Natural Resource Enterprise Management Program. Typically Offered: Fall.

NRS 203 (s) Workshop (1-16 credits)

Credit arranged

NRS 204 (s) Special Topics (1-16 credits)

Credit arranged

NRS 235 Society and Natural Resources (3 credits)

General Education: Social and Behavioral Ways of Knowing
Cross-listed with FOR 235

An exploration of how people use, value, manage, impact, and are affected by natural resources; course emphasizes social and economic realities and political and legal processes in a context of current and historical natural resource issues. Two lectures and one 1-hour small discussion group meeting per week.

NRS 299 (s) Directed Study (1-16 credits)

Credit arranged

NRS 310 Social Science Methods (4 credits)

Quantitative, qualitative, and mixed approaches to studying social aspects of conservation and the environment; how to choose and apply selective research methods; design, collection, and statistical analysis of primary and secondary data; program evaluation; reporting results; interpreting research literature; lab exercises in research design, data collection, and analysis; and the communication of research issues and findings to lay and professional audiences. Special fee assessed. Three lectures and 2 hours of lab per week. Recommended Preparation: Basic computer skills. (Fall only)

Prereqs: STAT 251

NRS 311 Public Involvement in Natural Resource Management (3 credits)

Theoretical and applied concepts of public involvement in both public and private sectors of natural resource management; case studies and applied techniques or methods for public involvement; National Environmental Policy Act (NEPA) regulations and other public involvement policy or law. Field trip may be required. (Spring only)

NRS 364 Politics of the Environment (3 credits)

Cross-listed with POLS 364

Political factors that influence formation, implementation, and impact of public policies aimed at protecting the environment.

NRS 383 Natural Resource and Ecosystem Service Economics (3 credits)

The role and application of economic theories and methods in natural resource and ecosystem service decision-making. Economic tools are applied to the management of forests, fisheries, rangeland, recreation, wildlife, and other contemporary issues. (Spring only)

Prereqs: FOR 235 or NRS 235; and ECON 202 or ECON 272; and MATH 143

NRS 386 Managing Complex Environmental Systems (3 credits)

Cross-listed with ENVS 386

Complex environmental systems are comprised of interconnected social, economic, and environmental components. Explore complex environmental systems frameworks and fundamental principles of sustainability in these systems by examining theory and practice in case studies. Topics may include natural resource scarcity and human conflict, ecosystem service provision, management, and conservation, and land tenure, rights, and justice relating to human access to natural resources.

NRS 387 Environmental Communication Skills (3 credits)

Introduction to communications skills in the context of natural resources, including environmental and cultural interpretation; communication psychology and media applied to noncaptive audiences in natural resource situations. Field trip may be required. Special fee assessed.

Prereqs: Permission

NRS 398 (s) Internship (1-16 credits)

Credit arranged

NRS 400 (s) Seminar (1-16 credits)

Credit arranged

NRS 403 (s) Workshop (1-16 credits)

Credit arranged

NRS 404 (s) Special Topics (1-16 credits)

Credit arranged

NRS 440 Restoration Ecology (3 credits)

Cross-listed with REM 440

The ecological restoration of disturbed ecosystems. Fundamental principles from ecology, ecophysiology, and community ecology are used in a systems ecology approach to examine how the structure and function of damaged ecosystems can be restored, with the goal of establishing a stable and self-sustaining ecosystem.

Prereqs: NR 321, FOR 221, REM 221, WLF 220, BIOL 314, or Permission.

NRS 462 Natural Resource Policy (3 credits)

Cross-listed with POLS 462

Political and institutional context for making natural resource policy; emphasis on interaction between private and public sectors and the federal, state, and tribal governments, including an examination of topical issues in natural resource politics.

NRS 472 Remote Sensing of the Environment (4 credits)

Cross-listed with FOR 472

Current airborne and satellite systems, data acquisition on ground and from remote locations, instrumentation, imagery interpretation and digital analysis, applications for natural resource science and management.

Two 75-minute lectures and one two-hour lab per week. Recommended Preparation: MATH 143. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

NRS 473 ECB Senior Presentation (1 credit)

General Education: Senior Experience

Cross-listed with FISH 473, FOR 473

, FSP 473, REM 473, WLF 473. Reporting and presenting the senior project (thesis or internship); taken after or concurrently with REM 497.

Serves as the senior capstone course for Ecology and Conservation Biology (ECB).

Prereqs: Instructor Permission

NRS 475 Local and Regional Environmental Planning (3 credits)

Cross-listed with ENVS 475

This course focuses on environmental planning by governments, nonprofit organizations, and collaborative partnerships at the local and regional level. Students will study a variety of planning approaches, such as community visioning and policy and management tools. Topics will include planning for public health, natural areas, working landscapes, and the built environment. Typically Offered: Varies.

Prereqs: Junior or Senior standing or permission.

NRS 476 Environmental Project Management and Decision Making (4 credits)

General Education: Senior Experience

Cross-listed with ENVS 476

Integrated, interdisciplinary approaches to project and program management and decision making. Emphasis on environmental planning techniques, scenario development, analysis, and application of geospatial tools such as GIS and remote sensing. Direct experience and basic skills for project and program development and evaluation. Typically Offered: Varies.

NRS 478 LIDAR and Optical Remote Sensing Analysis (3 credits)

Joint-listed with NRS 578

LIDAR and optical remote sensing data play a key role in natural resource and environmental research and management. Students will use open-source software to efficiently and effectively work with optical and LIDAR remote sensing datasets. Topics include introduction to open-source software for LIDAR and optical remote sensing analysis, acquisition and pre-processing of optical and LIDAR remote sensing data, and remote sensing analysis approaches that allow conversion of remotely sensed data into management/research relevant information. This course focuses on development and application of practical skills through project-based learning. For graduate credit, primary literature review, discussion, and a class project including evaluation and writeup of unique and advanced datasets is also required.

Prereqs: STAT 251 and WLF 370; or STAT 427 and NRS 472 or FOR 472

NRS 482 Outdoor Leadership Expedition (3 credits)

This expedition based course will explore the practice of leadership, using the wilderness experience as the classroom. Topics include trip planning, small group dynamics, decision-making, communication and expedition behavior. Examining leadership theory, modeling of leadership techniques, written assignments, and backcountry skill development are used to support learning.

NRS 484 Forest Policy and Admin (2 credits)

Cross-listed with FOR 484

Evaluation of land and forest problems and policies in the U. S. ; analysis of current conditions and policies; historical development of governmental and private agencies concerned with the administration of forest conservation program. Recommended Preparation: FOR 235.

Prereqs: Junior standing.

NRS 485 Ecology and Conservation Biology Senior Project (1-3 credits, max 3)

Cross-listed with FOR 485 and WLF 485

Scholarly work; learning objectives include development and formal proposal of a specific project and conducting the project or research with the guidance of a faculty mentor.

NRS 487 Environmental Education (3 credits)

Concept and techniques of environmental education with emphasis on informal education settings such as residential and day-use environmental education centers, nature centers, visitor centers. Field trip may be required. (Spring only)

NRS 488 NEPA in Policy and Practice (3 credits)

Joint-listed with NRS 588

In-depth review of the National Environmental Policy Act (NEPA), its legislative background and history, significant case law, and Council of Environmental Quality (CEQ) Guidelines. Students will review examples of agency Categorical Exclusions, Environmental Assessments, and Environmental Impact Statements. Students will evaluate whether specific documents "meet the intent or spirit" of NEPA, compare state vs. federal NEPA regulations, and review at least one federal agency's NEPA procedures.

NRS 490 Wilderness and Protected Area Management (3 credits)

Historical and legal aspects of the wilderness and protected area concepts; conceptual and applied approaches, considering both ecological and sociological elements; recent research. (Spring, alt/years)

NRS 497 Senior Thesis (2-4 credits, max 4)

Independently plan and conduct a thesis project; write and defend the thesis under supervision of an advisor.

Prereqs: Senior standing and minimum 3.2 GPA or Permission.

NRS 498 (s) Internship (1-16 credits)

Credit arranged

NRS 499 (s) Directed Study (1-16 credits)

Credit arranged For the individual student; conferences, library, field, or lab work.

Prereqs: Senior standing, 2.5 GPA, and Permission.

NRS 500 Master's Research and Thesis (1-16 credits)

Credit arranged

NRS 501 (s) Seminar (1-16 credits)

Credit arranged. Seminar examining a wide range of topics that cross-cut the diverse areas of expertise of faculty and graduate students in the Department of Natural Resources and Society. Each course focuses on a specific cross-cutting topic with special emphasis on examining how the topic is viewed with multiple perspectives across disciplinary boundaries. Emphasis is also placed on student cohort building, networking, and professional career development.

NRS 502 (s) Directed Study (1-16 credits)

Credit arranged

NRS 503 (s) Workshop (1-16 credits)

Credit arranged. Selected topics in the conservation and management of natural resources.

NRS 504 (s) Special Topics (1-16 credits)

Credit arranged

NRS 505 (s) Professional Development (1-16 credits)

Credit arranged. Credit earned in NRS 505 will not be accepted toward graduate degree programs.

NRS 506 Fundamentals of Research (2 credits)

Research approaches, designs, and methodologies as applied in biophysical and social science natural resource professions. Cooperative: open to WSU degree-seeking students.

Prereqs: Basic statistics

NRS 507 Moral Reasoning in Natural Resources (3 credits)

Exploration of the practical aspects of moral reasoning on current issues in natural resources. The purpose of the course is to discover the essence of reasoning, rationality, and reflection on moral and ethical dilemmas with regard to current issues in natural resources.

NRS 508 Foundations of Natural Resources and Society (1 credit)

Team-taught course introducing the five foundations of the NRS Graduate Program, namely: Philosophy of Science, Concepts and Theory in Science, Methods and Data, Science Application, and Professional Development. Emphasis is also placed on student cohort building with one or more field trips.

NRS 509 Writing a Scientific Article (2 credits)

Students will write and prepare to submit a scientific manuscript over the semester. We will workshop and discuss issues including writing styles, choosing a journal, and peer review. Students should have data ready to write up at the start of the semester. This course is appropriate for social, biophysical, and interdisciplinary scientists.

NRS 552 Current Lit in Remote Sensing (1 credit, max arranged)

Review, present, and discuss recent articles related to remote sensing of the environment. Students choose, critically review, and discuss the articles to develop critical-thinking skills, remote sensing research strategies, and confidence in their knowledge of the literature. Graded P/F.

NRS 555 Human Dimensions of Natural Resources (3 credits)

Application of theory and methods from behavioral, social, and policy science to conservation and natural resources management. Focus on multiple perspectives for managing fish, wildlife, and ecosystems, understanding how data that concern human behavior are collected and interpreted, and how insights integrate into management, rule-making, and policy. This requires knowledge of how people think and act toward resources and subsequent effects on those resources and management. The seminar format will use primers and case studies in addition to direct exposure to people, agencies, and organizations involved in Idaho's and the Pacific Northwest's fish, wildlife, and ecosystem management. Cooperative: open to WSU degree-seeking students.

NRS 556 Team Leadership for Environmental Educators (1 credit)

This course provides participants with the theoretical understandings and practical tools needed to develop an effective leadership practice. Students will be asked to build upon their life experience and their experience at MOSS to provide context for discussions and practice. Topics to be covered include group dynamics, strengths-based personal development, conflict resolution, and a survey of popular leadership theory. McCall Field Campus. (Fall only)

NRS 557 Community Leadership for Environmental Educators (1 credit)

This course explores the leadership theories and tools needed to create culture, build trust, and maintain efficiencies within small and large organizations. In particular, it will explore how organizations and teams confront change in order to find success. Students will be asked to build upon their life experience and their experience at MOSS to provide context for discussions and practice. McCall Field Campus. (Spring only)

NRS 560 Place-based Ecology I (4 credits)

Cover plant and animal community ecology from both a qualitative and quantitative perspective. Topics will include: community interaction of plants and animals; community dynamics, succession, and disturbance; basic data collection and statistical analysis of habitat association data; and the effect of abiotic factors on community structure. (Fall only)

NRS 562 Field Science Teaching (2 credits)

Cross-listed with POLS 562

Joint-listed with NRS 462 and POLS 462

Address basic natural history concepts for instructors involved in experiential environmental education with students 12 to 18 years old. Field activities, readings, and instructor modeling of teaching techniques will be included in the format of the course. The course will focus on how to engage each student to learn ecological principles and apply them in a field teaching setting. (Fall only)

NRS 563 Place Based Env. Education (4 credits)

Educating students so that they have the skills and knowledge base in order to begin to understand the human and natural environment in which they live is a complicated endeavor. This course is designed to provide a foundation of educational pedagogy, a survey of place-based literature in areas critical to this educational endeavor, and opportunities for personal and professional application. (Fall only)

NRS 564 Teaching Environmental Education in a Winter Environment (2 credits)

Address basic principles of ecology during winter. Emphasis will be placed on field experiences including principles of teaching in a winter environment, winter weather, and organism adaptation to winter. (Spring only)

NRS 565 Science Communication and the Environment (4 credits)

Examines the flow of scientific information between experts and non-experts, with emphasis on educational settings. Project-based and includes practice in digital storytelling, documentary film, blogs, podcasts, public talks, and field experiences. McCall Field Campus. (Spring Only)

NRS 566 Place-based Ecology II (4 credits)

Explore how plants and animals manage the unique survival challenges of winter. Delve into fundamentals of winter ecology including the changing snowpack, life under the ice, plants and animals in the winter environment and plant-animal interactions. The middle of the course addresses environmental change and interactions with winter ecology. At the end of the semester, the springtime environment will be used to study fundamental chemical and physical processes that drive the natural world emerging out of its apparent hibernation. Work outdoors to gain hands-on knowledge and practical experience. Field experiences will be fundamental in developing ecological understanding, with field trips to various locations to gain crucial insight into the natural world during the winter and spring seasons. Outdoor experience and learning will be complemented by lectures, group discussions, readings, and field experiments.

NRS 567 Environmental Education Teaching Practicum I (2 credits)

The teaching practicum is an opportunity to improve teaching methods and techniques and expand professional skills under the guidance of mentors at a residential environmental learning center. Teaching in a residential environmental learning center consists of classroom lectures and demonstrations with groups up to 30, as well as field teaching groups of 8 to 10. (Fall only)

NRS 568 Environmental Education Teaching Practicum II (2 credits)

The teaching practicum is an opportunity to improve teaching methods and techniques and expand professional skills under the guidance of mentors at a residential environmental learning center. Teaching in a residential environmental learning center consists of classroom lectures and demonstrations with groups up to 30, as well as field teaching groups of 8 to 10. (Spring only)

NRS 569 Environmental Education Teaching Practicum III (2 credits)

The teaching practicum is an opportunity to improve teaching methods and techniques and expand professional skills under the guidance of Teton Science School staff. Teaching at the Teton Science School consists of classroom lectures and demonstrations with groups up to 30, as well as field teaching groups of 8 to 10. (Spring Only)

NRS 574 Environmental Politics and Policy (3 credits)

Political and institutional context for the formulation, implementation, and evaluation of U. S. environmental policy.

NRS 575 Leadership for the Environmental Educator (2 credits)

Addresses basic outdoor leadership theory and practice for instructors involved with experiential environmental education with students 12 to 18 years old. Includes a back country trip, class work, instructor modeling, peer feedback and reflective practice. Focuses on the individual student's understanding of leadership theory and ability to put theory into practice as a member of a community of learners. McCall Field Campus. (Fall only)

NRS 576 Environmental Project Management and Decision Making (2 credits)

Integrated, interdisciplinary approaches to environmental project and program management and decision making. Emphasis on environmental planning techniques, scenario development, analysis, and application of geospatial tools such as GIS and remote sensing. Direct experience and basic skills for project and program development and evaluation.

NRS 578 LIDAR and Optical Remote Sensing Analysis (3 credits)

Joint-listed with NRS 478

LIDAR and optical remote sensing data play a key role in natural resource and environmental research and management. Students will use open-source software to efficiently and effectively work with optical and LIDAR remote sensing datasets. Topics include introduction to open-source software for LIDAR and optical remote sensing analysis, acquisition and pre-processing of optical and LIDAR remote sensing data, and remote sensing analysis approaches that allow conversion of remotely sensed data into management/research relevant information. This course focuses on development and application of practical skills through project-based learning. For graduate credit, primary literature review, discussion, and a class project including evaluation and writeup of unique and advanced datasets is also required.

Prereqs: STAT 251 and WLF 370; or STAT 427 and NRS 472 or FOR 472

NRS 580 Restoration Ecology Practicum (2 credits)

Capstone experience in the Restoration Ecology Certificate Program. Students work independently to develop plan for implementing and assessing the success of ecological restoration; plan must synthesize literature, concepts, and challenges; plan shall be written with graphics and electronic submission for possible Internet publication.

Prereqs: FIRE 526 and REM 440 or Permission.

NRS 588 NEPA in Policy and Practice (3 credits)

Joint-listed with NRS 488

In-depth review of the National Environmental Policy Act (NEPA), its legislative background and history, significant case law, and Council of Environmental Quality (CEQ) Guidelines. Students will review examples of agency Categorical Exclusions, Environmental Assessments, and Environmental Impact Statements. Students will evaluate whether specific documents "meet the intent or spirit" of NEPA, compare state vs. federal NEPA regulations, and review at least one federal agency's NEPA procedures.

NRS 592 Emerging Media Outreach in Natural Resources (3 credits)

This course introduces students to basic media skills in photography, audio, video, microblogging, social media, content management, basic coding – and blog on a topic of their choice. Students also will explore and share their field experience through a variety of media, and will engage and examine social media uses for advertising, marketing and public relations outreach in natural resources.

NRS 598 (s) Internship (1-16 credits)

Credit arranged

Prereqs: Permission.

NRS 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission.

NRS 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Prereqs: Admission to the doctoral program in Natural Resources and Department Permission

Naval Science (NS)

NS 101 Introduction to Naval Science (3 credits)

Introduction to the Naval Service: custom and traditions, structure, career paths, basic leadership, ethics and character development, duties of a junior officer, and ships/aircraft of the U. S. Navy Fleet. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

NS 104 Seapower and Maritime Affairs (3 credits)

An overview of U. S. naval history; seapower and maritime affairs beginning with the Continental Navy to present-day naval history. Cooperative: open to WSU degree-seeking students. (Spring only)

NS 121 Introduction to Naval Science Laboratory I (1 credit)

Practical instruction for introduction to Freshman Naval Science Students. Graded A/B/C/D/F. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

NS 122 Introduction to Naval Science Laboratory 2 (1 credit)

Practical instruction for introduction to Freshman Naval Science Students. Graded A/B/C/D/F. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

NS 200 (s) Seminar (1-16 credits)

Credit arranged

NS 203 (s) Workshop (1-16 credits)

Credit arranged

NS 204 (s) Special Topics (1-16 credits)

Credit arranged. Cooperative: open to WSU degree-seeking students.

NS 205 Navigation (3 credits)

Theory, principles, and procedures of terrestrial and electronic navigation, and rules of the nautical road. Cooperative: open to WSU degree-seeking students. (Spring only)

NS 206 Naval Leadership and Management (3 credits)

Theories of management and management resources, motivational theories, and leadership. Cooperative: open to WSU degree-seeking students. (Fall only)

NS 221 Introduction to Naval Science Laboratory 3 (1 credit)

Practical instruction for introduction to Sophomore Naval Science Students. Graded A/B/C/D/F. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

NS 222 Introduction to Naval Science Laboratory 4 (1 credit)

Practical instruction for introduction to Sophomore Naval Science Students. Graded A/B/C/D/F. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

NS 299 (s) Directed Study (1-16 credits)

Credit arranged.

NS 303 Ship Systems I (3 credits)

Intro to Naval shipboard engineering systems; propulsion systems; nuclear, gas turbine, and conventional; auxiliary systems and shipboard damage control; basic concepts in ship design. Cooperative: open to WSU degree-seeking students. (Fall only)

NS 304 Ship Systems II (3 credits)

Naval weapons systems; theory and process of detection (radar and sonar), evaluation; weapons; delivery, guidance, and explosives; integration of weapons systems with command, control, and communications systems. Cooperative: open to WSU degree-seeking students. (Spring only).

NS 311 Evolution of Warfare (3 credits)

Evolution of war through tactics; strategy from Sun Tzu to J. F. C. Fuller. Recommended preparation: NS 101, NS 104. Cooperative: open to WSU degree-seeking students. (Spring only).

NS 321 Introduction to Naval Science Laboratory 5 (1 credit)

Practical instruction for introduction to Junior Naval Science Students. Graded A/B/C/D/F. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

NS 322 Introduction to Naval Science Laboratory 6 (1 credit)

Practical instruction for introduction to Junior Naval Science Students. Graded A/B/C/D/F. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

NS 402 Naval Leadership and Ethics (3 credits)

An intellectual exploration of Western moral traditions and ethical philosophy within a military context. Topics will include military leadership, core values, professional ethics, and conduct of warfare with applications appropriate for future Navy and Marine Corps officers. Recommended preparation: NS 206. Cooperative: open to WSU degree-seeking students. (Spring only).

NS 403 (s) Workshop (1-16 credits)

Credit arranged

NS 404 (s) Special Topics (1-16 credits)

Credit arranged. Cooperative: open to WSU degree-seeking students.

NS 406 Naval Operations (3 credits)

Naval operations and tactics, relative motion, and Maneuvering Boards. Cooperative: open to WSU degree-seeking students. (Fall only)

Prereqs: NS 301.

NS 412 Fundamentals of Maneuver Warfare (3 credits)

Amphibious doctrine and its relation to maneuver warfare.

Recommended preparation: NS 311. Cooperative: open to WSU degree-seeking students. (Spring only)

NS 421 Introduction to Naval Science Laboratory 7 (1 credit)

Practical instruction for introduction to Senior Naval Science Students. Graded A/B/C/D/F. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

NS 422 Introduction to Naval Science Laboratory 8 (1 credit)

Practical instruction for introduction to Senior Naval Science Students. Graded A/B/C/D/F. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

NS 423 Introduction to Naval Science Laboratory 9 (1 credit)

Practical instruction for introduction to Senior Naval Science Students. Graded A/B/C/D/F. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

NS 424 Introduction to Naval Science Laboratory 10 (1 credit)

Practical instruction for introduction to Senior Naval Science Students. Graded A/B/C/D/F. (Spring) Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

NS 499 (s) Directed Study (1-16 credits)

Credit arranged.

Nez Perce Language (NEZP)

Vertically-related courses in this subject field are: NEZP 101 - NEZP 102. A maximum of 16 credits may be earned for vertical credit in any language in the Department of Modern Languages & Cultures.

NEZP 101 Elementary Nez Perce I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing
Cross-listed with AIST 101

Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar.

NEZP 102 Elementary Nez Perce II (4 credits)

Cross-listed with AIST 102

Pronunciation, vocabulary, reading, spoken Nez Perce, and functional grammar. Typically Offered: Varies.

Prereqs: AIST 101

NEZP 204 (s) Special Topics (1-16 credits)

Credit arranged

NEZP 398 (s) Internship (1-16 credits)

Credit arranged

NEZP 499 (s) Directed Study (1-16 credits)

Credit arranged

Nuclear Engineering (NE)

NE 400 (s) Seminar (1-16 credits)

Credit arranged

NE 404 (s) Special Topics (1-16 credits)

Credit arranged

NE 438 Fundamentals of Nuclear Materials (3 credits)

Cross-listed with MSE 438

Joint-listed with MSE 538 and NE 538

This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Term projects and advanced problems required for graduate credit. (Spring only)

Prereqs: MSE 201 or NE 450; or Permission

NE 450 Principles of Nuclear Engineering (3 credits)

Basic nuclear and atomic processes; radioactive decay, binding energy, radiation interactions, reaction cross sections. Neutron diffusion, radiation sources. Idaho Falls only.

Prereqs: MATH 310, ENGR 320, or Permission

NE 498 (s) Internship (1-16 credits)

Credit arranged

NE 499 (s) Directed Study (1-16 credits)

Credit arranged

NE 500 Master's Research and Thesis (1-16 credits)

Credit arranged. Course offered only in Idaho Falls.

NE 501 (s) Seminar (1-16 credits)

Credit arranged. Course offered only in Idaho Falls.

NE 502 (s) Directed Study (1-16 credits)

Credit arranged

NE 504 (s) Special Topics (1-16 credits)

Credit arranged

NE 505 (s) Professional Development (1-16 credits)

Credit arranged

NE 512 Nuclear Components Inspection (3 credits)

Cross-listed with MSE 512

This course will cover various non-destructive testing techniques to evaluate the environmental degradation of the nuclear structural components. Remnant life estimation of structural components exposed to fatigue, creep, and stress corrosion cracking service conditions will be discussed.

Prereqs: Graduate standing or Permission

NE 513 Nuclear Security Science (3 credits)

An engineering course on threat and risk informed nuclear security covering topics including: physical protection, facility characterization, consequence analysis, access control/delay, insider threats, security culture, transportation security, radiological crime scene, and nuclear forensics.

Prereqs: Science or Engineering background or instructor permission

NE 514 Nuclear Safety (3 credits)

Cross-listed with TM 514

An in-depth technical study of safety issues within the nuclear fuel cycle and within various reactor types. Evaluation methods, system disturbances, safety criteria, containment, NRC licensing, and codes for safety analysis will be presented. Case studies of reactor accidents and corrective measures included.

Prereqs: Permission.

NE 516 Nuclear Rules and Regulations (3 credits)

Cross-listed with TM 516

An in-depth examination of nuclear regulatory agencies; major nuclear legislation; current radiation protection standards and organizational responsibility for their implementation.

Prereqs: Permission.

NE 520 Thermodynamics of Nuclear Power Plants (3 credits)

Course covers applications of First Law to power nuclear plants: boiling water, pressurized, high temperature gas, small modular and advanced nuclear power plants. Nuclear power plant applications of pressurizers, suppression pools, nuclear containment, the application of the Second Law to exergy analysis of advanced fuel cycles.

Prereqs: Permission

NE 524 Heat Exchanger Design (3 credits)

This course will cover advanced heat exchanger design and apply that knowledge to the design of the following heat exchangers: tube-in-tube heat exchanger, air cooler, compact heat exchanger, feedwater heater, and condenser.

Prereqs: Permission

NE 527 Nuclear Material Storage, Transportation, and Disposal (3 credits)

There is a wide range of nuclear materials that are stored, transported and disposed of each day. The materials include medical radioisotopes, new fuel pellets, used fuel, and industrial radioisotopes. This course will cover the regulations that govern nuclear material storage, transportation and disposal, as well as the engineering requirements and practical aspects of handling these materials.

NE 528 Management of Nuclear Facilities (3 credits)

Cross-listed with TM 538

Nuclear facilities need a sustainable management system to make sure that matters of importance are not dealt with in isolation of other issues in the decision making process. Integrating all relevant issues, ranging from safety, security and safeguards to health and economic and environmental questions, leads to well-informed and balanced decisions. This course addresses from a practical point of view the safety and regulatory issues of operating and planned reactors in the U. S. and other countries.

NE 529 Risk Assessment (3 credits)

Cross-listed with TM 529

In-depth evaluation and analysis techniques used to determine the risk of industrial, process, nuclear, and aviation industries; fault tree analysis; human reliability analysis; failure mode and effect analysis.

NE 530 Two-Phase Flow (3 credits)

Treatment of fluid mechanics and heat transfer in conjunction with nuclear reactors where two-phase flow problems are found. Typically Offered: Varies.

NE 535 Nuclear Criticality Safety (3 credits)

Cross-listed with TM 513

Nuclear criticality safety including nuclear physics, fusion and neutron multiplication, moderation and reflection of neutrons, criticality issues in the fuel cycle, critical experiments and sub-critical limits, calculations of criticality, nuclear criticality safety practices, emergency procedures, and nuclear regulations and standards.

Prereqs: NE 450 or Permission.

NE 536 Electrochemical Engineering (3 credits)

Cross-listed with CHE 536

Application of chemical engineering principles to electrochemical systems; thermodynamics, kinetics, and mass transport in electrochemical systems; electrochemical process design.

NE 537 Radiation Effects on Materials (3 credits)

Cross-listed with MSE 537

Interactions between radiation and solids.

Prereqs: MSE 201 or Permission.

NE 538 Fundamentals of Nuclear Materials (3 credits)

Cross-listed with MSE 538

Joint-listed with MSE 438 and NE 438

This course is designed for students who wish to learn about nuclear materials and fuels from a materials science viewpoint. Topics to be covered include crystal structure, diffusion, radiation damage processes etc. Students who wish to receive credit for the 500 level course are required to do term-projects and advanced problems. (Spring only)

Prereqs: MSE 201 or NE 450; or Permission

NE 544 Reactor Analysis - Statics and Kinetics (3 credits)

Course offered only in Idaho Falls. Behavior of nuclear reactors in steady state and transient conditions. Calculation of varying power conditions, fuel burn-up, coolant perturbations, and other reactor parameters. Typically Offered: Fall.

Prereqs: Permission

NE 548 Modeling of Thermal and Chemical Systems (3 credits)

The course introduces students to methods, techniques, and process modeling software for modeling of thermal and chemical systems. The basic concepts and principles include power generation, refrigeration, cooling towers, air separation, hydrogen and ammonia production. Components such as compressors, turbines, pumps, heat exchangers, piping, fluid and gas mixtures, and chemical reactors are modeled. Economics and dynamic systems modeling are also covered.

Prereqs: ME 322, ME 345, ME 420 or Permission

NE 551 Nuclear Reactor Fuels (3 credits)

Selection of materials and design of nuclear fuels, light water reactor fuels, metal and oxide dispersed fuels, high temperature ceramic fuels.

Prereqs: Permission

NE 554 Radiation Detection and Shielding (3 credits)

Cross-listed with TM 535

Radiation transport and shielding concepts. Methods for quantifying attenuation of nuclear particles and electromagnetic radiation. Radiation detection methods, data acquisition and processing.

Prereqs: MATH 310 or Permission

NE 575 Advanced Nuclear Power Engineering (3 credits)

Present and advanced nuclear power plant descriptions and analysis. Engineering aspects of converting nuclear fission energy to useful work. Group project design. Idaho Falls only.

Prereqs: Permission

NE 582 Spent Nuclear Fuel Management and Disposition (3 credits)

Joint-listed with CHE 582

The management of nuclear fuel after removal from a nuclear reactor; storage options, recycle and recovery of uranium and other radionuclides, geological repositories, and related topics.

Prereqs: Permission

NE 585 Nuclear Fuel Cycles (3 credits)

Cross-listed with MSE 585

Processes to support the existing LWR fuel cycle. Alternative fuel cycles including U-233, Pu239 and mixed oxide fuels, and advanced reactor concepts. Recycling and recovery of nuclear materials, with emphasis on traditional fast reactor recycle. Typically Offered: Fall.

Prereqs: Permission

NE 587 Nuclear Decommissioning (3 credits)

Concepts and strategies for decommissioning nuclear facilities including project and program management, waste management, and site environmental restorations.

Prereqs: NE 450

NE 598 (s) Internship (1-16 credits)

Credit arranged

NE 599 (s) Research (1-16 credits)

Credit arranged

NE 600 Doctoral Research & Dissertation (1-45 credits)

Credit arranged

Operations Management (OM)

OM 204 (s) Special Topics (1-16 credits)

Credit arranged

OM 298 (s) Internship (1-3 credits, max 6)**OM 299 (s) Directed Study (1-16 credits)**

Credit arranged

OM 370 Introduction to Operations and Supply Chain Management (3 credits)

Examines the concepts and tools used to design, implement, manage, evaluate and improve the business operations used to create and deliver value to customers through supply chains. Globalization, ethics, social responsibility and sustainability issues associated with operations will also be considered. May involve evening exams. Typically Offered: Fall, Spring and Summer.

Prereqs: STAT 251 or STAT 301 or MATH 330

OM 378 Project Management (3 credits)

Planning, organizing, staffing, controlling, and directing an organization's resources for special projects; topics include matrix organizations, cross functional teamwork, budgeting, work breakdown structures, critical path method (CPM), program evaluation and review techniques (PERT), capacity planning, and project control. May involve evening exams. Typically Offered: Fall, Spring, Summer.

OM 398 Internship (1-3 credits, max 6)**OM 404 (s) Special Topics (1-16 credits)**

Credit arranged

OM 439 Systems and Simulation (4 credits)

Distribution theory, random numbers, modeling concepts, and simulation of queuing and inventory systems. Students must have access to a laptop computer for use in class. Three lectures and one 3-hour lab a week. May involve evening exams. May involve field trips. Typically Offered: Fall and Spring.

Prereqs: OM 370, CHE 453, ME 313, or MSE 453; or Permission

OM 456 Enterprise Quality Management (3 credits)

Cross-listed with STAT 456

Principles of quality management, with a focus on Lean Six Sigma concepts and Define-Measure-Analyze-Improve-Control (DMAIC) approach to managing and improving enterprise quality. Additional work required for graduate credit. May include evening exams. May involve field trips. Typically Offered: Varies.

Prereqs: STAT 251 or STAT 301 or Permission

OM 470 Supply Chain Analytics (3 credits)

Prepares students with descriptive, diagnostic, predictive and prescriptive analytics tools to explore key issues associated with the design, implementation, and management of various supply chains, with emphasis on the strategic planning, sourcing, logistics, inventory management, sales and operation planning and distribution. May involve evening exams. Typically Offered: Fall and Spring.

Prereqs: BUS 354 and OM 370

OM 472 Enterprise Planning and Scheduling (3 credits)

In-depth analysis and application of planning and scheduling techniques in enterprise operations, with emphasis on key modules of manufacturing, planning, and control systems and their implications on companies' supply chains. ERP software will be introduced. May involve evening exams and field trips.

Prereqs: OM 370

OM 498 (s) Internship (1-16 credits)

Credit arranged

OM 499 (s) Directed Study (1-16 credits)

Credit arranged

Organizational Sciences (ORGS)

ORGS 204 (s) Special Topics (1-16 credits)

Credit arranged

ORGS 210 Introduction to Organizational Sciences (1 credit)

An orientation course for students interested in pursuing the Bachelors Degree in Organizational Sciences. The goal of the course is to expose students to the major specializations offered by the degree program: General Organizational Science, Workplace Relations, and Nonprofit Community Organizations.

Prereqs: Completion of at least 15 credit hours of college level course work.

ORGS 255 Financial Literacy (3 credits)

Financial literacy basics with emphasis on behaviors influencing financial decisions including wants vs. needs spending, controlling debt, impact of credit scores, credit card expenditures, saving and spending plans, spending addictions, consumer loans, risk-taking, avoiding mistakes, goal setting, banking, educational debt, life's financial phases, investing, protecting assets, and current financial events and trends. Typically Offered: Fall and Spring.

ORGS 305 Nonprofit Organizations (3 credits)

An introduction to nonprofit organizations. The course covers the several ways that nonprofits differ from for-profit and governmental organizations: mission and values, legal distinctions, leadership and oversight, expenses and revenue, and community relations/community impact. Recommended preparation: ORGS 210.

ORGS 320 Budgeting for Small Organizations (1 credit)

A basic introduction to budgets and the budgeting process, focusing on how to prepare, interpret, use, and manage organizational budgets to increase students' likelihood of future success.

ORGS 330 Workplace Motivation and Soft Skills (3 credits)

Workplace motivation (e. g. , organizational structure, employee incentives, social, cultural, and physical environments, external influences, individual differences) and soft skills (e. g. , emotional intelligence, communication abilities, getting along with others, leadership, professionalism) are keys to behaviors that support personal and professional development, productivity, and overall well-being in the workplace. This course examines both applied and theoretical perspectives on these issues. Typically Offered: Fall and Spring.

ORGS 400 (s) Seminar (1-16 credits)

Credit arranged

ORGS 404 (s) Special Topics (1-16 credits)

Credit arranged

ORGS 407 Advanced Nonprofit Organizations (3 credits)

Provides an in-depth exploration of nonprofit organizations and their role in society, nonprofit purpose, mission, characteristics and structure. Topics include how nonprofits differ from for-profit and governmental organizations, nonprofit industry and careers, starting a nonprofit; nonprofit operations (accountability, reporting, staffing, marketing, technology); planning, strategy, governance (boards and volunteers); nonprofit law; nonprofit programs and program evaluation.

Prereqs: ORGS 305.

ORGS 410 Capstone Project in Organizational Sciences (1-6 credits, max 6)

General Education: Senior Experience

Completion of a project with a business, governmental agency, community or nonprofit organization. The project can be research or service-based. Students will be expected to provide a final product (document, presentation, etc.) that details all aspects of the project. Approval of a project proposal by the student's advisor should be sought when requesting permission to enroll. Typically Offered: Fall, Spring and Summer.

Prereqs: Instructor Permission

ORGS 414 Traumatic Events: Preparation, Intervention, Evaluation (3 credits)

Cross-listed with PSYC 414

Traumatic Events (TEs) range from local to large scale human-induced or catastrophic natural disasters (violent crimes, major accidents, weather events, etc.). This course is designed to address integral response elements: (a) preparation (e. g. , organizing, planning, training, equipping) (b) intervention (e. g. , multi-agency coordination, logistics, triage, first & secondary responses, volunteers, incident command, communication, mitigation, psychological first aid, media, safety, security) (c) evaluation (e. g. , after-action reports, lessons learned, hotwash, best practices, research).

Prereqs: PSYC 101 or Instructor Permission

ORGS 415 Planning Professional Conferences and Events (3 credits)

Organizational planning and logistics for successful professional meetings, conferences, and other events. Considerations include themes and missions; physical, site, and technological needs; budgeting; invitees, attendees, and registrants, vendors; contracts, risk, and liabilities; and contingency planning. Recommended preparation: ORGS 210

ORGS 435 Personnel (3 credits)

Cross-listed with PSYC 435

Joint-listed with ORGS 535 and PSYC 535

Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Additional work required for graduate credit.

Prereqs: PSYC 101

ORGS 441 Human Relations in the Workplace (3 credits)

Cross-listed with PSYC 441

Joint-listed with ORGS 541 and PSYC 541

Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit.

Prereqs: PSYC 101

ORGS 444 Methods and Analysis in Organizational Science (4 credits)

Overview of the many tools of data gathering and analysis in the applied social sciences. Includes coverage of surveys, study design, analysis, online and bibliographic resources and archives, etc. Typically Offered: Fall and Spring.

Prereqs or Coreqs: STAT 153, STAT 251, or PSYC 215

ORGS 450 Organizational Systems and Projects (3 credits)

Cross-listed with PSYC 450

Joint-listed with ORGS 550

An exploration of Systems approaches to organizational performance. Includes coverage of goal setting, outcome determination, process management, performance feedback and evaluation, training support, and system revision/improvement. Additional project/assignments required for graduate credit. Typically Offered: Varies.

Prereqs: PSYC 101

ORGS 494 Research Experience in Organizational Sciences (1-16 credits, max 16)

Credit arranged. Supervised experience in conducting research in organizational performance/organizational behavior. Topics vary depending on match of student interests to those of current faculty or qualified affiliates. May include research with local business, agencies, or other entities under joint supervision of faculty and entity sponsor. Recommended preparation: ORGS 444 and consultation with ORGS advisor. Typically Offered: Fall and Spring.

Prereqs: Sophomore standing or higher

ORGS 497 (s) Practicum in Instruction (1-16 credits)

Credit arranged

ORGS 498 (s) Internship (1-16 credits)

Credit arranged

ORGS 499 (s) Directed Study (1-16 credits)

Credit arranged

ORGS 502 (s) Directed Study (1-16 credits)

Credit arranged

ORGS 504 (s) Special Topics (1-16 credits)

Credit arranged

ORGS 505 (s) Professional Development (1-16 credits)

Credit arranged

ORGS 535 Personnel (3 credits)

Cross-listed with PSYC 535

Joint-listed with ORGS 435 and PSYC 435

Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Additional work required for graduate credit. PSYC 535 is cooperative: open to WSU degree-seeking students.

Prereqs: PSYC 101**ORGS 541 Human Relations in the Workplace (3 credits)**

Cross-listed with PSYC 541

Joint-listed with ORGS 441 and PSYC 441

Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit. PSYC 541 is cooperative: open to WSU degree-seeking students.

Prereqs: PSYC 101**ORGS 550 Organizational Systems and Projects (3 credits)**

Cross-listed with PSYC 500

Joint-listed with ORGS 450, PSYC 450

An exploration of Systems approaches to organizational performance. Includes coverage of goal setting, outcome determination, process management, performance feedback and evaluation, training support, and system revision/improvement. Additional project/assignments required for graduate credit. Typically Offered: Varies.

PGA Golf Management (PGA)

PGA 103 Introduction to PGA Golf Management (2 credits)

This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on the history of the game, PGA Constitution, career enhancement, and the rules of golf. (Fall only)

Prereqs: PGM Major.**PGA 105 Introduction to PGA Teaching and Coaching (Level 1) (3 credits)**

This class introduces concepts essential to becoming a proficient golf instructor and the necessary elements of an effective golf teaching and player development business. There are four main sections of this course curriculum. First, an introduction on how students process knowledge as it relates to physical movement, and how to distinguish between learning and performance of a golf skill (Learning A). Second, a focus on how to effectively build relationships with the facility and those you are teaching golf. It will help the students understand the importance of adapting your communication style to the correct audience, and how to effectively plan a teaching program at a facility and an individual lesson for a student (Teaching A). Third, focus on the fundamentals of the golf swing, and the cause and effect in ball flight, in both the long and short game (Game A). Lastly, an introductory module that gives a background on the golf industry and the business rationale for player development programs (Player Development A). Typically Offered: Spring.

Prereqs: PGA 103**PGA 110 PGA Golf Management Player Development (1 credit, max arranged)**

This course will assist PGA Golf Management students in their efforts to pass the PGA of America's Playing Ability Test (PAT) by providing access to a golf game tracking and improvement software along with individual and group golf instruction. All PGA Golf Management students must pass the PAT prior to graduation. Graded P/F.

Prereqs: Marketing - PGA Golf Management major**PGA 150 PGA Golf Management I (3 credits)**

This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on Tournament Operations, Golf Car Fleet Management, Golf Club Repair and Design. Other topics previewed will be Business Planning and Operations and Customer Relations.

Prereqs: PGA 103**PGA 204 (s) Special Topics (1-16 credits)**

Credit arranged

PGA 205 Intermediate PGA Teaching and Coaching (Level 2) (3 credits)

This class will build on the topics learned in PGA 105. It introduces the idea that a successful golf instructor must study the game of golf and gain expertise in four fundamental areas: knowledge of teaching, knowledge of learning, knowledge of the game of golf, and player development strategies. Like PGA 105 this course will have four main areas of focus that build on previous topics. First, the focus will be on feedback and transfer practice. Explanations on how feedback functions in learning golf skills and discusses the key factors that influence effectiveness, in a combination of how variables within practice help facilitate golf skill learning (Learning B). Second, a focus on how to make sure you control the pace and delivery of the instruction. We will begin to introduce how to use learning aids in golf lessons and create effective practice routines for the students (Teaching B). Third, explore golf teaching methodologies of top teaching professionals. These methodologies will be explored in class and serve as the foundation for each student starting to define their own teaching methodology (Game B). Lastly, learn how to design, implement, and operate a player development program that benefits both the facility and its customers (Player Development B). Typically Offered: Spring.

Prereqs: PGA 105**PGA 251 PGA Golf Management II (3 credits)**

This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on Business Communications, Business Planning & Operations, Customer Relations, and PGA/PGM Electives. Other topics previewed will be Merchandising & Inventory Management and Supervising & Delegating.

Prereqs: PGA 103, PGA 150 and PGM major**PGA 298 (s) Internship (1-3 credits, max 6)****PGA 299 (s) Directed Study (1-16 credits)**

Credit arranged

PGA 305 Advanced PGA Teaching and Coaching (Level 3) (3 credits)

This class will build on the topics learned in PGA 105 and PGA 205. This course will work on creating seamless integration of learning, teaching, and game elements. This course will include discussions on club alteration and fitting components. Player Development will be a large portion of this class as the discussion turns to tying teaching into the overall operation of a golf course and how to better build a business plan that includes teaching and how that affects the overall budget. Like PGA 105 and 205 this course will have four main areas of focus that build on previous topics. First, a focus on mental practice, motor imagery, and optimizing transfer. There will be a more detailed discussion on practice and how mental practice, motor imagery, and learning help affect the transfer of learning from the range to the golf course. There will be a higher level of discussion on how to avoid pitfalls of mental game and how to optimize playing performance (Learning C). Second, more focused discussion on how to create long-term processes for improvement as a teacher and for the students being taught. This will mean a greater focus on golfers that are already playing at a high level (Teaching C). Third, a focus on a great depth of teaching methodologies especially focusing on teaching advanced shot-making skills. Included will also be how to make the correct equipment suggestions and fitting for each individual player (Game C). Lastly, an emphasis on the business impact of teaching and player development programs. There will be an in-depth discussion on how to do a market assessment of teaching needs in the area and how that fits in and affects the facilities overall budget (Player Development C). Typically Offered: Spring.

Prereqs: PGA 205

PGA 385 PGA Golf Management III (3 credits)

This course will examine the golf industry and the golf professional's role within the industry. Attention will focus on Merchandising & Inventory Management and Supervising & Delegating. Other topics previewed will be an overview of the Final Experience.

Prereqs: PGA 103, PGA 150, and PGA 251

PGA 386 Food and Beverage Hospitality with Lab (4 credits)

Introduction to hospitality and commercial leisure enterprises. The course will include food and beverage service operation, profit and cost accounting, techniques, marketing, advertising schemes and the relationship between business and leisure programs, services, and products. Field trips required.

Prereqs: PGM Major or Permission

PGA 398 (s) Internship (1-3 credits, max 6)**PGA 404 (s) Special Topics (1-16 credits)**

Credit arranged

PGA 499 (s) Directed Study (1-16 credits)

Credit arranged

Philosophy (PHIL)

PHIL 102 Reason and Rhetoric (2 credits)

General Education: Oral Communication

Form and style of argumentative discourse; development of critical thinking and rhetorical skills as students prepare and deliver written and oral presentations; construction, evaluation, and presentation of arguments; identification of arguments and fallacies to improve abilities to organize thoughts, express them clearly and simply, and judge the suitability of material for the audience.

PHIL 103 Introduction to Ethics (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Introduction to philosophical reasoning through historical study of moral thought.

PHIL 200 Philosophy of Alcohol (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

This course will introduce students to philosophical analysis through the topic of alcohol. Some issues we will cover are ethical: Can we exercise free will when intoxicated? If not, can we still blame an intoxicated person for their actions? What is the nature of addiction and when are we justified in intervening on someone else's addiction? Some issues are metaphysical: Are beer styles a natural classification or merely conventional? There are also aesthetic issues: Is taste just subjective, or can we scrutinize taste objectively? Some are historical: What is the role of alcohol in the history of philosophy? This course addresses these and many other philosophical issues that can be presented through the topic of alcohol.

PHIL 201 Critical Thinking (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

Acquiring and improving important skills of thinking, reading, and writing critically; emphasis on avoiding fallacies and mastering forms of valid argument in ordinary language.

PHIL 202 Introduction to Symbolic Logic (3 credits)

Development of systematic techniques for assessing validity of arguments; includes categorical logic, propositional logic, and elementary quantificational logic.

PHIL 204 (s) Special Topics (1-16 credits)

Credit arranged

PHIL 205 Topics in Social Philosophy (3 credits)

This course will introduce students to topics in social philosophy through historical and contemporary readings. Topics may include (but are not limited to), treatments of race, gender, disability status, human rights, and social and political institutions.

PHIL 208 Business Ethics (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

Introduction to philosophical reasoning through historical study of Western moral thought, with specific application to ethical issues related to business practice and corporate social responsibility.

PHIL 209 Mind and Madness (3 credits)

Just exactly what is mental illness? Do all cases of mental illness have some physical underpinning, or is there such a thing as a disorder of thought? What might delusions tell us about the nature and structure of mind? What are the prospects for mind-body medicine? Can we be justified in forcing persons to submit to mental treatment, and under what circumstances? Is mental illness the same across cultures? This course examines these and other questions raised by the study and treatment of mental disorder, as in philosophy of mind, epistemology, action theory, metaethics, and applied ethics. The course also examines the relationship between psychiatric research, clinical practice, and social policy.

PHIL 221 Philosophy in Film (3 credits)

This course uses film as a philosophical text, discussing philosophical theories and topics presented in films, both old and new. Topics typically include the nature of existence, the difference between appearance and reality, motivation, memory, personal identity, and/or authenticity. Cooperative: open to WSU degree-seeking students.

PHIL 240 Belief and Reality (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Introduction to epistemology (examination of grounds and limits of knowledge) and metaphysics (inquiry into the nature of reality) through historical and contemporary readings.

PHIL 302 Biblical Judaism: Texts and Thought (3 credits)

Cross-listed with RELS 302

Analysis of the Hebrew Bible (Old Testament) and related texts with an emphasis on hermeneutics and thought.

PHIL 303 Early Christianity: Texts and Thought (3 credits)

Cross-listed with RELS 303

Analysis of the New Testament and other early Christian texts of the first and second centuries C. E. with an emphasis on hermeneutics and thought.

PHIL 307 Buddhism (3 credits)

Cross-listed with RELS 307

Philosophy and religion of Gautama Buddha as it developed in India, Tibet, China, and Japan.

PHIL 312 Decision Theory (3 credits)

This course is an introduction to decision theory. Students will learn how to model decisions. The models will be used to analyze decisions made under ignorance and under risk (or uncertainty). The course then examines various philosophical aspects of the field, including the nature of utility and probability. Finally, the course examines various applications of decision theory and alternative approaches (some complementary, others rivalry).

PHIL 320 History of Ancient and Medieval Philosophy (3 credits)

Philosophical thought from the early Greeks through the Middle Ages; concentration on metaphysics and theory of knowledge. Cooperative: open to WSU degree-seeking students.

PHIL 321 History of Modern Philosophy (3 credits)

Critical evaluation of the thought of major figures in early modern philosophy, such as Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume, and Kant; emphasis on metaphysics and epistemology. Cooperative: open to WSU degree-seeking students.

PHIL 325 (s) Historical Figures in Philosophy (3 credits, max arranged)

Study of a major philosophical figure from the history of philosophy. May be repeated for credit. Recommended preparation: one philosophy course.

PHIL 351 Philosophy of Science (3 credits)

General Education: Humanistic and Artistic Ways of Knowing
Introduction to the critical analysis of the aims and methods of science, its principles, practices, and achievements.

Prereqs: 3 credits of philosophy or natural science Cooperative: open to WSU degree-seeking students.

PHIL 352 Philosophy, Politics, and Economics (3 credits)

Cross-listed with POLS 352

This course will introduce students to the topics and methods of Philosophy, Politics, and Economics (PPE). The approach will be interdisciplinary, with the aim of investigating and illustrating how and why these three disciplines are indispensable to addressing both the normative and factual issues each poses on its own. The course will cover basic methods in rational choice theory, game theory, social choice theory, and political philosophy to explore problems pertaining to decision-making, coordination, cooperation, and justice. The texts will include both traditional and contemporary writings on these issues.

PHIL 361 (s) Professional Ethics (3 credits, max 6)

General Education: Humanistic and Artistic Ways of Knowing
Study of ethical issues and problems arising in professions. Each section focuses on a specific area of professional ethics including, but not limited to, agricultural ethics, bioethics, business ethics, and engineering ethics.

Prereqs: PHIL 103

PHIL 400 (s) Seminar (1-16 credits)

Credit arranged

PHIL 404 (s) Special Topics (1-16 credits)

Credit arranged

PHIL 408 Feminism and Philosophy (3 credits)

An exploration of how feminist philosophies have brought to light gender bias in western philosophy and have (re)constructed theories in metaphysics, epistemology, and ethics. Students will see how these philosophies address the experiences of women and other groups whose interests have been historically neglected and misrepresented.

PHIL 417 Philosophy of Biology (3 credits)

Philosophical thinking about meaning, reference, and truth. Additional assignments required for graduate credit.

Prereqs: 3 credits of biology and 3 credits of philosophy or Permission

PHIL 427 History of Political Philosophy II (3 credits)

Cross-listed with POLS 426

Joint-listed with POLS 526

and Foundations and development of modern liberalism; analysis of its characteristic goals, and democratic, socialist, and communitarian critics of the project; study of authors including Hobbes, Locke, Rousseau, Marx, and contemporary theorists such as Rawls.

PHIL 442 Philosophy of Mind (3 credits)

Survey of current philosophical theories of the nature of minds and mental states, including forms of dualism, reductive physicalism, functionalism, and eliminative materialism. Additional assignments required for graduate credit. Recommended Preparation: PHIL 202 and PHIL 240. Cooperative: open to WSU degree-seeking students.

PHIL 443 Philosophy of Language (3 credits)

Joint-listed with PHIL 543

Philosophical thinking about meaning, reference, and truth. Additional assignments required for graduate credit. Recommended Preparation: PHIL 202 and PHIL 240. Cooperative: available to WSU degree-seeking students.

PHIL 446 Metaphysics (3 credits)

Classical and contemporary readings on such items as realism versus nominalism, free will and determinism, the nature of causality, the existence of God, personal identity, modality. Recommended Preparation: PHIL 202 and PHIL 240. Cooperative: open to WSU degree-seeking students.

PHIL 447 Theory of Knowledge (3 credits)

Analysis of the nature of knowledge; survey of various philosophical positions on the sources and extent of what we know. Recommended Preparation: PHIL 202 and PHIL 240. Cooperative: open to WSU degree-seeking students.

PHIL 450 Ethics in Science (3 credits)

An investigation of social and ethical issues in scientific research and the place of ethics in a scientific worldview.

Prereqs: PHIL 103, PHIL 201, PHIL 202, or PHIL 240; or Permission

PHIL 452 Environmental Philosophy (3 credits)

Joint-listed with ENVS 552 and PHIL 552

Philosophical examination of various ethical, metaphysical, and legal issues concerning humans, nature, and the environment; issues covered may include biodiversity and species protection, animal rights, radical ecology, environmental racism, wilderness theory, population control, and property rights. Additional projects/assignments required for graduate credit.

PHIL 460 Ethical Theory (3 credits)

Critical analysis of classical consequentialist and deontic views as well as one or more recent theories such as emotivism and prescriptivism, feminist ethics, communitarianism, or virtue ethics.

PHIL 490 Senior Seminar (3 credits)

General Education: Senior Experience

Required of all philosophy majors; capstone course devoted to mastery of the philosophical essay; topics will vary.

Prereqs: Senior standing or completion of 24 credits in philosophy.

PHIL 496 Teaching Methods in Philosophy (2 credits, max 4)

Learn methods of teaching while assisting in an introductory-level philosophy course. Graded P/F.

Prereqs: Four upper-division courses in philosophy, the introductory course in which the student will participate, and Department Permission

PHIL 498 (s) Internship (1-16 credits)

Credit arranged

PHIL 499 (s) Directed Study (1-16 credits)

Credit arranged

PHIL 500 Master's Research & Thesis (1-16 credits)

Credit arranged

PHIL 501 (s) Seminar (1-16 credits, max arranged)

Credit arranged. Graded P/F.

Prereqs: Permission

PHIL 502 (s) Directed Study (1-16 credits)

Credit arranged

PHIL 503 (s) Workshop (1-16 credits)

Credit arranged

PHIL 504 (s) Special Topics (1-16 credits)

Credit arranged

PHIL 552 Environmental Philosophy (3 credits)

Cross-listed with ENVS 552

Joint-listed with PHIL 452

Philosophical examination of various ethical, metaphysical, and legal issues concerning humans, nature, and the environment; issues covered may include biodiversity and species protection, animal rights, radical ecology, environmental racism, wilderness theory, population control, and property rights. Additional projects/assignments required for graduate credit.

PHIL 599 (s) Research (1-16 credits)

Credit arranged

Physical Ed--Professional (PEP)

PEP 100 Introduction to Exercise Science and Health (1 credit)

Introduction to foundational content, subdisciplines of study in exercise science, and fields of health. Students will also gain an understanding of career opportunities within the areas of exercise science & health. (Fall only)

PEP 107 Movement Fundamentals (1 credit)

Skill development and teaching knowledge of the fundamentals and concepts of movement. Two lecture-labs per week.

Prereqs: ESHS, Dance, or Recreation major or Permission

PEP 132 Skill and Analysis of Striking and Net/Wall Activities (1 credit)

This course is designed to develop proficiency in basic skills, strategies, tactics, error detection and correction, rules, teaching skills and curricular models for striking and net/wall activities (e. g. tennis, badminton, pickleball, volleyball, softball, cricket, etc.). Lecture-lab.

Prereqs: ESHS, Dance, or Recreation major or Permission

PEP 133 Skill and Analysis of Target and Invasion Activities (1 credit)

This course is designed to develop proficiency in basic skills, strategies, tactics, error detection and correction, rules, teaching skills, and curricular models for target and invasion activities (e. g. golf, bowling, basketball, soccer, team handball, hockey, football, ultimate Frisbee, etc.). Lecture-lab.

Prereqs: ESHS, Dance, or Recreation major or Permission

PEP 134 Skill and Analysis of Recreation and Outdoor Activities (1 credit)

This course is designed to develop proficiency in basic skills, strategies, rules, ethics, teaching skills, and designing teaching progressions and curricular models for recreation and outdoor activities (e. g. snow shoeing, wall climbing, orienteering, geocaching, skating, bicycling, hiking/walking, jogging, camping). Field trips required.

Prereqs: ESHS, Dance, or Recreation major or Permission

PEP 171 Athletic Training Clinical Experience I - Observation (1 credit)

Introductory clinical experience and insight into the profession of Athletic Training. Students will receive supervised clinical education experience in UofI's Athletic Training Room. Students will complete the application process into the clinical experience portion of the Athletic Training major in this course. 40 hours/clinical observation. Graded P/F. (Spring only)

Prereqs: Permission

PEP 200 (s) Seminar (1-16 credits)

Credit arranged

PEP 203 (s) Workshop (1-16 credits)

Credit arranged

PEP 204 (s) Special Topics (1-16 credits)

Credit arranged

PEP 275 Moral Reasoning in Sport (2 credits)

Joint-listed with PEP 475

Current ethical issues in sport, such as performance-enhancing drugs, mechanization, cheating, eligibility; challenges students to creatively examine their beliefs.

PEP 299 (s) Directed Study (1-16 credits)

Credit arranged

PEP 300 Applied Human Anatomy and Biomechanics (3 credits)

This course is designed to provide the student with the anatomical and biomechanical knowledge essential to conduct a systematic qualitative analysis of human movement in clinical, educational, performance, and wellness settings. Two hours of lecture, two hours of lab per week.

Prereqs: BIOL 227 or Permission

PEP 301 Mental Training (2 credits)

Students will learn and apply mental training skills that are necessary for developing a personalized peak performance program.

Prereqs: Permission. Enrollment is restricted to students who are highly engaged in performance activities such as athletes, performing artists, military cadets, etc.

PEP 305 Applied Sports Psychology (3 credits)

Overview of key psychological issues in physical education and sport including competition, personality, anxiety, motivation, self-confidence, imagery, and stress management; practical applications of psychological concepts of youth sports and development of key psychological skills for competition.

PEP 350 Elementary Health and Physical Education (1 credit)

Provides learner with knowledge, experiences, and skills in the pedagogy of health, physical education, and physical activity for diverse K-8 students. Typically Offered: Fall.

PEP 360 Motor Behavior (3 credits)

Overview of development, control, and learning throughout the lifespan. Four hours of lecture-lab per week.

Prereqs or Coreqs: BIOL 227

PEP 400 (s) Seminar (1-16 credits)

Credit arranged

PEP 403 (s) Workshop (1-16 credits)

Credit arranged

PEP 404 (s) Special Topics (1-16 credits)

Credit arranged.

PEP 405 (s) Professional Development (1-16 credits)

Credit arranged. Credit earned may not be applied toward grad degree programs but may be accepted for fifth-year certification. Professional development in physical education and sport professional personnel. Additional projects/assignments required for graduate credit.

PEP 407 Sport Biomechanics (3 credits)

Joint-listed with PEP 507

The purpose of this course is to investigate sport performance from an applied mechanical approach. Students will assess sport techniques, injury risk factors and equipment designs incorporating concepts of Newtonian Mechanics.

Prereqs: PEP 300

PEP 409 Concepts in Strength and Conditioning (3 credits)

This course provides students with the theory and practice of resistance training that prepares students to take certification exams such as the National Strength and Conditioning Association Certified Strength and Conditioning Specialist (CSCS) exam. Two lectures and one lab per week. Typically Offered: Fall.

Prereqs: BIOL 227

PEP 412 Elementary Methods in Physical Activity Pedagogy (3 credits)

This course focuses on the study and application of effective teaching behaviors, methods and curricular models, and the process of planning, implementing, and evaluating teaching and administering a program at the elementary level. A practicum with elementary students is required during this course. Lecture-lab.

Prereqs: Admission to teacher education program and MVSC 201, PEP 107, PEP 133, PEP 360 and PEP 413 or by permission

PEP 413 Foundations and Assessment in Physical Activity Pedagogy (3 credits)

This course will develop learner competencies in the foundations of physical education, i. e. profession, professional standards, philosophical, cultural, historical and social aspects of physical education and physical activity pedagogy; and assessment, research and technology in physical activity pedagogy.

Prereqs: MVSC 201 and PEP 132 and PEP 133 and PEP 134

PEP 418 Physiology of Exercise (3 credits)

Effects of physical activity on the circulatory, respiratory, and other systems. Two lectures and 2 hours of lab per week. Typically Offered: Fall and Spring.

Prereqs: MVSC 201, BIOL 227 and BIOL 228; or Permission

PEP 421 Secondary Methods in Physical Activity Pedagogy (3 credits)

This course focuses on the study and application of effective teaching behaviors, methods and curricular models, and the process of planning, implementing, and evaluating teaching and administering a program at the secondary level. A practicum with middle and high school students is required during this course. Lecture-lab.

Prereqs: Admission to teacher education program and MVSC 201, PEP 132, PEP 134, PEP 300 or by permission

PEP 424 Inclusive Physical Education and Recreation (3 credits)

Cross-listed with RSTM 424

To provide an overview of movement and physical activities in physical education and recreational settings for individuals with disabilities.

Emphasis will be on history, etiology, characteristics, services, resources, professional competencies, and instructional strategies. Practical experience (16 hours in the community) is required to enhance instructional abilities to adapt and create an inclusive physical education and recreational setting for all participants.

Prereqs: Senior standing or Permission.

PEP 430 Activity and Health in Movement and Leisure Sciences (3 credits)

Cross-listed with RSTM 430

Joint-listed with PEP 530 and RSTM 530

This course familiarizes students with contemporary research and professional applications of activity in relation to health and wellness using a variety of perspectives in movement and leisure sciences and related disciplines. (Fall only)

PEP 455 Design & Analysis of Research in Movement Sciences (3 credits)

Cross-listed with RSTM 455

This course is designed to survey the basic types of research methods often found in exercise science and health; and recreation. A variety of research designs and computerized statistical analyses are studied to help students understand the systematic nature of problem solving. Various research problems as they relate to exercise science and health; and recreation are discussed for the purpose of identifying the broad and diverse nature of research in the movement, leisure, and health professions. (Spring only)

Prereqs: Junior or Senior standing.

PEP 459 Sport Nutrition (3 credits)

Cross-listed with FN 459

Joint-listed with PEP 559

This course will explore the fundamentals of nutrition and how nutrition plays a role in sports performance. This course will also cover the macronutrient requirements for sport and the role carbohydrates, fats and proteins play in fueling the body at rest and during exercise. Additionally, special topics about vitamins, minerals, and dietary supplements as well as certain nutritional concerns of various types of athletes will be discussed. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

Prereqs: Permission

PEP 463 Epidemiology of Physical Activity and Health (3 credits)

Joint-listed with PEP 563

This class focuses on the history of physical activity and health, adaptations to training, benefits of physical activity, and consequences of inactivity and sedentary behavior as related to specific disease states and conditions. Students will be required to read and discuss pertinent literature in physical activity and health. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

PEP 475 Moral Reasoning in Sport (2 credits)

Joint-listed with PEP 275

Current ethical issues in sport, such as performance-enhancing drugs, mechanization, cheating, eligibility; challenges students to creatively examine their beliefs.

PEP 484 (s) Internship in Physical Education Teaching (1-14 credits)

Guided observation, supervised instruction, and comprehensive team and independent teaching in elementary and secondary school settings. Students will be following the school district full semester calendar.

Graded P/F.

Prereqs: Admission to teacher education program and PETE faculty approval

Coreqs: EDCI 401

PEP 493 Fitness Assessment and Prescription (3 credits)

Development of skills in exercise testing, data interpretation, and prescription for health related fitness. Two lectures and 2 hours of lab per week. Typically Offered: Fall and Spring.

Prereqs: PEP 418 or Permission

PEP 495 (s) Practicum (1 credit, max arranged)

Gen Ed: Senior Experience Supervised field work.

Prereqs: Permission

PEP 498 Internship in Exercise Science & Health (1-16 credits)

General Education: Senior Experience
Credit arranged. Supervised field work.

PEP 499 (s) Directed Study (1-16 credits)

Credit arranged

PEP 500 Master's Research and Thesis (1-16 credits)

Credit arranged

PEP 501 (s) Seminar (1-16 credits)

Credit arranged

PEP 502 (s) Directed Study (1-16 credits)

Credit arranged

PEP 503 (s) Workshop (1-16 credits)

Credit arranged

PEP 504 (s) Special Topics (1-16 credits)

Credit arranged.

PEP 505 (s) Professional Development (1-16 credits)

Joint-listed with PEP 405

Credit arranged

PEP 507 Sport Biomechanics (3 credits)

Joint-listed with PEP 407

The purpose of this course is to investigate sport performance from an applied mechanical approach. Students will assess sport techniques, injury risk factors and equipment designs incorporating concepts of Newtonian Mechanics.

Prereqs: PEP 300

PEP 518 Advanced Physiology of Exercise (3 credits)

Principles and methods essential to the experimental approach to understand how the human body responds to short-term bouts of exercise and subsequently adapts to exposure to long-term exercise training. Two lectures per week.

PEP 522 Pedagogy Applied to Health, Physical Education, Recreation, and Dance (3 credits)

Provides theoretical and practical skills in the study and analysis of the teaching and learning process in health, physical education, recreation, and dance.

PEP 523 Physical Activity Assessment and Enrichment (3 credits)

This course is designed to focus learners on physical activity assessment and enrichment research with specific application to active travel, community, park, school site, and workplace physical activity.

PEP 530 Activity and Health in Movement and Leisure Sciences (3 credits)

Cross-listed with RSTM 530

Joint-listed with PEP 430 and RSTM 430

This course familiarizes students with contemporary research and professional applications of activity in relation to health and wellness using a variety of perspectives in movement and leisure sciences and related disciplines. (Fall only)

PEP 544 Program Development (3 credits)

Developing programs associated with physical education and sport science using current conceptual frameworks and models. Field-testing of programs may be required.

PEP 559 Sport Nutrition (3 credits)

Joint-listed with FN 459, PEP 459

This course will explore the fundamentals of nutrition and how nutrition plays a role in sports performance. This course will also cover the macronutrient requirements for sport and the role carbohydrates, fats and proteins play in fueling the body at rest and during exercise. Additionally, special topics about vitamins, minerals, and dietary supplements as well as certain nutritional concerns of various types of athletes will be discussed. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

PEP 560 Sport Psychology (3 credits)

Provides an understanding of how psychological factors influence performance and how simple and easy-to-use mental training techniques may be employed to enhance performance and enjoyment; using the Coaches' Guide to Sport Psychology and accompanying workbook, teachers/coaches will address such important psychological topics as peak performance, motivation, communication, leadership, self-confidence, concentration, stress management, imagery, goal setting, arousal control, and mental plans/performance routines; workbook exercises, case studies, and hands-on projects will teach mental training principles and help practitioners develop skills that they can successfully use to enhance performance with their students/athletes. (Fall only)

PEP 561 Motivation in Sport and Recreation (3 credits)

Practical, hands-on course designed to teach basics of motivation to physical educators, coaches, and recreation professionals; major achievement motivation theories and primary antecedents and consequences of motivated behavior; five major motivational enhancement strategies including goal setting, personal science, competition, feedback, and reinforcement; guidelines for maximizing effectiveness; analysis of applied motivation questions such as dropouts/burnouts, peak performance, exercise adherence, injury rehabilitation, increasing enjoyment, designing reward systems, and positive parental involvement. (Spring only)

PEP 563 Epidemiology of Physical Activity and Health (3 credits)

Joint-listed with PEP 463

This class focuses on the history of physical activity and health, adaptations to training, benefits of physical activity, and consequences of inactivity and sedentary behavior as related to specific disease states and conditions. Students will be required to read and discuss pertinent literature in physical activity and health. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

PEP 570 Ethical Practice and Communication in Physical Activity (3 credits)

Problem-solving approach to communication and practice of ethics in physical activity. (Fall only)

PEP 598 (s) Internship (1-16 credits)

Credit arranged. Supervised field experience in an appropriate public or private agency.

PEP 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

PEP 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

PEP 699 Non-Dissertation Doctoral Research (1-16 credits)

Credit arranged. Research not directly related to dissertation.

Prereqs: Enrollment to a doctoral program

Physics (PHYS)

PHYS 100 Fundamentals of Physics (3 credits)

General Education: Natural/Integrated Science

For students in nontechnical fields. Conceptual study of laws of nature and their application, including mechanics, heat, electricity and magnetism, light, and modern physics. Three lectures per week. Carries no credit after PHYS 111 or PHYS 211. Typically Offered: Spring.

PHYS 100L Fundamentals of Physics Lab (1 credit)

General Education: Natural/Integrated Science

For students in nontechnical fields. Conceptual study of laws of nature and their application, including mechanics, heat, electricity and magnetism, light, and modern physics. One 2-hour lab per week. Typically Offered: Spring.

Coreqs: PHYS 100

PHYS 103 General Astronomy (3 credits)

General Education: Natural/Integrated Science

Descriptive and physical astronomy; development of astronomical thought; properties and evolution of the solar system, stars, galaxies, and the universe. (Fall only)

PHYS 104 Astronomy Lab (1 credit)

General Education: Natural/Integrated Science

Naked eye, telescopic, and photographic observations of constellations, stars, and planets. One 2-hour lab per week. (Fall only) Prereqs or

Coreqs: PHYS 103

PHYS 111 General Physics I (3 credits)

General Education: Natural/Integrated Science

Gen Ed: Natural and Applied Sciences Carries no credit after PHYS 211. Kinematics, forces and dynamics, conservation laws, thermodynamics, waves. Three lectures and one recitation per week.

Prereqs: MATH 143.

PHYS 111L General Physics I Lab (1 credit)

Gen Ed: Natural and Applied Sciences Kinematics, forces and dynamics, conservation laws, thermodynamics, waves. One 2-hour lab per week.

Prereqs: MATH 143.

Coreqs: PHYS 111

PHYS 112 General Physics II (3 credits)

General Education: Natural/Integrated Science

Carries no credit after PHYS 212. Electricity, magnetism, optics, and modern physics. Three lectures and one recitation per week. Typically Offered: Spring.

Prereqs: PHYS 111

PHYS 112L General Physics II Lab (1 credit)

General Education: Natural/Integrated Science

Electricity, magnetism, optics, and modern physics. One 2-hour lab per week. Typically Offered: Spring.

Coreqs: PHYS 112

PHYS 200 (s) Physics Seminar (1 credit)

Introductory-level discussion of topics in modern physics; introduction to physics research topics and scientific information search techniques; written and/or oral reports of a pertinent topic in current physics. (Fall only)

PHYS 203 (s) Workshop (1-16 credits)

Credit arranged

PHYS 204 (s) Special Topics (1-16 credits)

Credit arranged

PHYS 211 Engineering Physics I (3 credits)

General Education: Natural/Integrated Science

Kinematics and dynamics, Newton's laws, work and energy, rotational dynamics, linear and angular momentum, collisions, static equilibrium, oscillations, gravity and central forces. Three lectures and one recitation per week. Typically Offered: Fall and Spring.

Coreqs: MATH 170

PHYS 211L Laboratory Physics I (1 credit)

Gen Ed: Natural and Applied Sciences Kinematics and dynamics, Newton's laws, work and energy, rotational dynamics, linear and angular momentum, collisions, static equilibrium, oscillations, gravity, central forces, and thermodynamics. One 2-hour lab per week.

Coreqs: PHYS 211

PHYS 212 Engineering Physics II (3 credits)

General Education: Natural/Integrated Science

Electric fields and potentials, magnetic fields, capacitance and inductance, DC and AC circuits, electromagnetic waves. Three lectures and one recitation per week. Typically Offered: Fall and Spring.

Prereqs: PHYS 211

Coreqs: MATH 175

PHYS 212L Laboratory Physics II (1 credit)

Gen Ed: Natural and Applied Sciences Electric fields and potentials, magnetic fields, capacitance and inductance, DC and AC circuits, electromagnetic waves, mechanical waves, and geometric optics. One 2-hour lab per week.

Coreqs: PHYS 212

PHYS 213 Engineering Physics III (3 credits)

Fluid dynamics, waves in elastic media, sound waves, temperature, heat and thermodynamics, kinetic theory, geometric and physical optics. Three lectures and one recitation per week. Typically Offered: Spring.

Prereqs: PHYS 211

Prereqs or Coreqs: MATH 175

PHYS 299 (s) Directed Study (1-16 credits)

Credit arranged

PHYS 305 Modern Physics (3 credits)

Quantum and relativity theories with applications to atomic, solid state, nuclear, and elementary particle physics. Typically Offered: Fall.

Prereqs: PHYS 212 and PHYS 213

PHYS 321 Analytical Mechanics (3 credits)

Review of single-particle kinematics and dynamics; linear oscillations; Lagrangian dynamics; orbital dynamics; motion in non-inertial systems; space rotation of rigid bodies. Typically Offered: Fall (Even Years).

Prereqs: PHYS 212

Coreqs: MATH 275 and MATH 310

PHYS 333 Statistical Thermodynamics (3 credits)

Cross-listed with CHEM 495

Classical thermodynamics, entropy, thermodynamic potentials, kinetic theory, classical and quantum statistical mechanics, ensembles, partition functions, introduction to phase transitions. Typically Offered: Spring (Even Years).

Prereqs: CHEM 306 or PHYS 305

PHYS 341 Electromagnetic Fields I (3 credits)

This course is designed to provide undergraduate physics majors advanced instruction in electrostatics. The specific areas which will be covered are electric fields, electric potentials, work and energy in electrostatics, the technique of using the concept of image charges to solve for the electric field and electric potential of complex charge distributions, Laplace's and Poisson's equations, electric dipoles, polarization and polarizable materials, and the electric dipole approximation. Typically Offered: Fall (Odd Years).

Prereqs: PHYS 212 and MATH 275

PHYS 342 Electromagnetic Fields II (3 credits)

This course is designed to provide undergraduate physics majors advanced instruction in electrodynamics and magnetism. The specific areas that will be covered are magnetostatics, magnetic fields in matter, the vector potential, electrodynamics, the complete set of Maxwell's equations, electromagnetic waves, waveguides, electric and magnetic dipole radiation, retarded and advanced potentials, and radiation arising from accelerated charges and charge distributions. Typically Offered: Spring (Even Years).

Prereqs: PHYS 341

PHYS 351 Introductory Quantum Mechanics I (3 credits)

Schrodinger equation, one-dimensional systems including the free particle, bound states, potential barriers, harmonic oscillator, matrix methods, and Dirac notation; interpretations of quantum theory; quantum mechanics in three-dimensions including the hydrogen atom, angular momentum, and spin systems; identical particles; symmetries and conservation laws in quantum mechanics. Typically Offered: Spring (Odd Years).

Prereqs: PHYS 305

Coreqs: PHYS 371 or MATH 330

PHYS 371 Mathematical Physics (3 credits)

Cross-listed with MATH 371

Mathematical techniques needed in upper-division physics courses, including vector analysis, matrices, Sturm-Liouville problems, special functions, partial differential equations, complex variables. Typically Offered: Fall (Even Years).

Prereqs: PHYS 212 and MATH 275

PHYS 400 (s) Seminar (1-16 credits)

Credit arranged

PHYS 403 (s) Workshop (1-16 credits)

Credit arranged

PHYS 404 (s) Special Topics (1-16 credits)

Credit arranged

PHYS 411 Advanced Physics Lab (4 credits)

Research skills, group dynamics, scientific literature research/drafting, automation and design techniques to prepare students for post-graduate life in a physics laboratory setting. 1-hour distributed lecture time and 3-hr effective lab time per week. Some weeks require scheduling machine utilization time outside of standard class hours per student. Typically Offered: Spring (Even Years).

Prereqs: PHYS 305, PHYS 211L, and PHYS 212L

PHYS 428 Numerical Methods (3 credits)

Cross-listed with ENGR 428 and MATH 428

Joint-listed with MATH 529 and PHYS 528

Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications. Additional projects and/or assignments required for graduate credit.

Prereqs: MATH 310.

PHYS 438 Biological Physics (3 credits)

Joint-listed with PHYS 538

Physics principles applied to biological systems including organisms, cells, and biomolecules. Techniques for studying biological systems and phenomena. Additional projects/assignments required for graduate credit. Prereq for PHYS 438: PHYS 212 or PHYS 213; Junior or Senior standing. Prereq for PHYS 538: Graduate Standing or Permission.

PHYS 443 Optics (3 credits)

Joint-listed with PHYS 543

Geometrical optics, wave optics and physical optics with emphasis on modern instrumentation and methods of measurement. Additional projects/assignments required for graduate credit. Prereq for PHYS 443: PHYS 342. Prereq for PHYS 543: Admission to Physics Graduate program or Permission.

PHYS 464 Solid State Physics (3 credits)

Joint-listed with PHYS 564

Crystal structure and lattice dynamics including elastic and thermal properties of solids; electron dynamics including band theory, theory of metals and semiconductors, superconductivity, magnetism; solid-state device-physics; characterization of materials; special topics chosen by the instructor. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

Prereqs: PHYS 321 and PHYS 341; or Permission

Coreqs: PHYS 351 or Permission

PHYS 465 Nuclear and Particle Physics (3 credits)

Joint-listed with PHYS 565

Particle production and detection, properties and classification of particles, the quark model of hadrons, symmetries and conservation laws, interactions, grand unification, the strong interaction and nuclear forces, models for nuclear structure and reactions. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students. Prereq for PHYS 465: PHYS 305. Prereq for PHYS 565: Admission to physics graduate program or Permission.

PHYS 484 Astrophysics (3 credits)

Joint-listed with PHYS 584

Celestial mechanics; planets and planetary systems; structure and evolution of stars and star systems; special and general relativity; cosmology. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students. Prereq for PHYS 484: PHYS 305 or MATH 275; or Permission. Prereq for PHYS 584: Admission to physics graduate program or Permission.

PHYS 490 Research (0-6 credits, max 6)

Undergraduate research or thesis. Typically Offered: Varies.

Prereqs: Permission of Instructor.

PHYS 492 Senior Research (1 credit)

General Education: Senior Experience

Undergraduate research in one of the department focus areas. Scientific communication through one presentation to the scientific community and one written report.

Prereqs: Junior or Senior Standing; or Permission of Instructor.

PHYS 498 (s) Internship (1-16 credits)

Credit arranged

PHYS 499 (s) Directed Study (1-16 credits)

Credit arranged

PHYS 500 Master's Research and Thesis (1-16 credits)

Credit arranged

PHYS 501 (s) Seminar (0-16 credits)

Credit arranged Graded P/F.

Prereqs: Permission

PHYS 502 (s) Directed Study (1-16 credits)

Credit arranged

PHYS 503 (s) Workshop (1-16 credits)

Credit arranged

PHYS 504 (s) Special Topics (1-16 credits)

Credit arranged

PHYS 521 Advanced Mechanics (3 credits)

Classical mechanics; Lagrange's and Hamilton's principles, two-body problem, rigid body motion, special relativity, canonical transformation, Hamilton-Jacobi theory, small oscillations, and Lagrangian and Hamiltonian formulations for continuous systems and fields.

Cooperative: open to WSU degree-seeking students.

PHYS 528 Numerical Methods (3 credits)

Cross-listed with MATH 529

Joint-listed with ENGR 428, MATH 428, and PHYS 428

Systems of equations, root finding, error analysis, numerical solution to differential equations, interpolation and data fitting, numerical integration, related topics and applications. Additional projects and/or assignments required for graduate credit.

Prereqs: MATH 310.

PHYS 533 Statistical Mechanics (3 credits)

Ensembles, partition functions, classical and quantum statistics renormalization group, criticality, scaling, interacting systems, simulation. Cooperative: open to WSU degree-seeking students.

Prereqs: PHYS 333.

PHYS 538 Biological Physics (3 credits)

Joint-listed with PHYS 438

Physics principles applied to biological systems including organisms, cells, and biomolecules. Techniques for studying biological systems and phenomena. Additional projects/assignments required for graduate credit. Prereq for PHYS 438: PHYS 212 or PHYS 213; Junior or Senior standing. Prereq for PHYS 538: Graduate Standing or Permission.

PHYS 541 Electromagnetic Theory I (3 credits)

Analytical tools and techniques describing electromagnetic phenomena, particularly Maxwell's equations, electrostatic and magnetostatic systems, including currents and their interactions and boundary value problems. Cooperative: open to WSU degree-seeking students.

Prereqs: PHYS 342.

PHYS 542 Electromagnetic TheoryII (3 credits)

Further examinations of the analytical tools and techniques that describe electromagnetic phenomena, particularly electrodynamics, the general theory of emission, propagation and absorption of electromagnetic waves, and the relativistic formulation of electrodynamics. Cooperative: open to WSU degree-seeking students.

Prereqs: PHYS 541.

PHYS 543 Optics (3 credits)

Joint-listed with PHYS 443

Geometrical optics, wave optics and physical optics with emphasis on modern instrumentation and methods of measurement. Additional projects/assignments required for graduate credit. Prereq for PHYS 443: PHYS 342. Prereq for PHYS 543: Admission to Physics Graduate program or Permission.

PHYS 550 Quantum Mechanics I (3 credits)

Fundamental concepts, base kets and matrix representation, position and momentum space; Schroedinger and Heisenberg picture, Schroedinger's wave equation and solutions; theory of angular momentum. Cooperative: open to WSU degree-seeking students.

Prereqs: PHYS 351.

PHYS 551 Quantum Mechanics II (3 credits)

Theory of angular momentum continued; symmetries in quantum mechanics; approximation methods, time-dependent and time-independent perturbation theory, applications to atomic systems; radiation theory, theory of scattering. Cooperative: open to WSU degree-seeking students.

Prereqs: PHYS 550.

PHYS 564 Solid State Physics (3 credits)

Joint-listed with PHYS 464

Crystal structure and lattice dynamics including elastic and thermal properties of solids; electron dynamics including band theory, theory of metals and semiconductors, superconductivity, magnetism; solid-state device-physics; characterization of materials; special topics chosen by the instructor. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

Coreqs: PHYS 351 or Permission

PHYS 565 Particle and Nuclear Physics (3 credits)

Joint-listed with PHYS 465

Particle production and detection, properties and classification of particles, the quark model of hadrons, symmetries and conservation laws, interactions, grand unification, the strong interaction and nuclear forces, models for nuclear structure and reactions. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students. Prereq for PHYS 465: PHYS 305. Prereq for PHYS 565: Admission to Physics Graduate program or Permission.

PHYS 571 Mathematical Methods of Physics (3 credits)

Methods and problems. Cooperative: open to WSU degree-seeking students.

Prereqs: PHYS 322 or Permission.

PHYS 584 Astrophysics (3 credits)

Joint-listed with PHYS 484

Celestial mechanics; planets and planetary systems; structure and evolution of stars and star systems; special and general relativity; cosmology. Additional projects/assignments required for graduate credit. Prereq for PHYS 484: PHYS 305 or MATH 275; or Permission. Prereq for PHYS 584: Admission to Physics Graduate program or Permission.

PHYS 598 (s) Internship (1-16 credits)

Credit arranged

PHYS 599 (s) Research (1-16 credits)

Credit arranged

PHYS 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Plant Pathology (PLP)

PLP 299 (s) Directed Study (1-16 credits)

Credit arranged.

PLP 404 (s) Special Topics (1-16 credits)

Credit arranged

PLP 411 Viruses and Virus Diseases of Plants (3 credits)

Joint-listed with PLP 511

Nature of plant viruses, vector-virus relationships and virus diseases of plants. Additional assignments required for graduate credit. Typically Offered: Spring (Odd Years).

Prereqs: EPPN 154 and EPPN 155; or BIOL 250 and BIOL 255; and PLSC 102; or Permission. Cooperative: open to WSU degree-seeking students.

PLP 415 Plant Pathology (3 credits)

Joint-listed with PLP 515

Biology of diseases and disorders of crop, forest, and ornamental plants, with emphasis on plant-microbe interactions and on disease cause, development, diagnosis, and control. Three 1-hour lectures. (Fall only)

Prereqs: EPPN 154 and EPPN 155; or BIOL 250; and PLSC 102; or Permission

PLP 416 Plant Pathology Lab (1 credit)

Joint-listed with PLP 516

As a companion course to PLP 415/515 Plant Pathology, this laboratory course increases student knowledge about plant diseases caused by environmental factors and microorganisms. This laboratory course provides hands#on training in the identification and classification of representative plant diseases, including isolation and culturing techniques for plant pathogenic fungi, bacteria, nematodes and viruses.

Prereqs: EPPN 154 and EPPN 155 or BIOL 250 and 255; and PLSC 102; or Permission

Coreqs: PLP 415 and PLP 515

PLP 499 (s) Directed Study (1-16 credits)

Credit arranged.

PLP 500 Master's Research and Thesis (1-16 credits)

Credit arranged

PLP 501 (s) Seminar (1-16 credits)**PLP 502 (s) Directed Study (1-16 credits)****PLP 504 (s) Special Topic (1-16 credits)**

Credit arranged

PLP 511 Viruses and Virus Diseases of Plants (3 credits)

Joint-listed with PLP 411

Nature of plant viruses, vector-virus relationships and virus diseases of plants. Additional assignments required for graduate credit. Typically Offered: Spring (Odd Years). Cooperative: open to WSU degree-seeking students.

PLP 512 Viruses and Virus Diseases of Plants Laboratory (1 credit)

As a companion course to PLP 511 Viruses and Virus Diseases of Plants, this laboratory course increases student knowledge about plant diseases caused by viruses. This laboratory course provides hands#on training in the identification and classification of viruses that infect plants and cause plant disease. One 2-hour 20-minute lab per week. (Spring, alt/odd years)

Prereqs: PLSC 102; EPPN 154 and 155 or BIOL 250 and 255; or Permission

Coreqs: PLP 511

PLP 515 Plant Pathology (3 credits)

Joint-listed with PLP 415

Biology of diseases and disorders of crop, forest, and ornamental plants, with emphasis on plant-microbe interactions and on disease cause, development, diagnosis, and control. Three 1-hour lectures. (Fall only)

Prereqs: EPPN 154 and EPPN 155; or BIOL 250; and PLSC 102; or Permission.

PLP 516 Plant Pathology Lab (1 credit)

Joint-listed with PLP 416

As a companion course to PLP 415/PLP 515 Plant Pathology, this laboratory course increases student knowledge about plant diseases caused by environmental factors and microorganisms. This laboratory course provides hands#on training in the identification and classification of representative plant diseases, including isolation and culturing techniques for plant pathogenic fungi, bacteria, nematodes and viruses.

Prereqs: EPPN 154 and EPPN 155 or BIOL 250 and 255; and PLSC 102, or Permission

Coreqs: PLP 415 or PLP 515

PLP 522 Plant Bacteriology (3 credits)

The purpose of this class is to provide current information on the biology of plant associated bacteria, including plant pathogens and beneficial microbes. Topics addressed will include bacterial morphology, taxonomy, genetics, and ecology. Diagnosis, disease management, and the molecular basis of host-pathogen interactions will be presented.

Prereqs: PLP 415 or PLP 515; and EPPN 154 and EPPN 155 or BIOL 250 and BIOL 255; or Permission

PLP 597 (s) Practicum (1-16 credits)

Credit arranged.

PLP 598 (s) Internship (1-16 credits)

Credit arranged.

Prereqs: Permission.

PLP 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission.

PLP 600 (s) Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Plant Science (PLSC)

PLSC 102 The Science of Plants in Agriculture (3 credits)

Principles of structure, biology, and management of agronomic and horticultural crops; interaction of crop plants and cropping systems with environment; current issues related to plant science. Two lectures and one 2-hour lab per week.

PLSC 201 Principles of Horticulture (3 credits)

An introduction to the production and management of edible and ornamental horticultural crops and the maintenance of plants and turf in urban landscapes. Two lectures and two hours of lab per week; two field trips. (Spring, alt/years)

Prereqs: PLSC 102

PLSC 204 (s) Special Topics (1-16 credits)

Credit arranged

PLSC 205 General Botany (4 credits)

Growth, development and ecology of plants, fungi, and protists in relation to their environments. Recommended Preparation: CHEM 101 and PLSC 102. (Spring only)

Prereqs: BIOL 114 or BIOL 115.

PLSC 207 Introduction to Biotechnology (3 credits)

Cross-listed with GENE 207

Offers an overview of modern biotechnology, focusing on basic concepts and applications of biotechnology with regards to plants, animals, environment and microorganisms, and medicine. Recommended preparation: CHEM 101 or CHEM 111. (Fall, alt/even years)

PLSC 212 Master Gardener (1-3 credits, max 3)

Basic horticultural skills required for home gardeners and landscapers, including soil, water, and fertility management, composting, pest and disease identification and management, vegetable and fruit culture, ornamentals, plant propagation, and lawn care. Graded P/F. Field trips.

PLSC 300 Plant Propagation (3 credits)

Sexual and asexual propagation techniques of herbaceous and woody ornamental plants; propagation methods covered including seed, cuttings, layering, grafting, and cloning/tissue culture. Two lectures and one 3-hour lab per week. (Alt/years)

Prereqs: PLSC 102, PLSC 201, or BIOL 115.

PLSC 338 Organic and Conventional Weed Management (4 credits)

Nature and scope of weed problems, identification and biology of weeds, principles, theory, and practice of cultural, mechanical, chemical, and biological control of weeds; legal considerations; integration of methods into functional management systems. Two lectures and one 3-hour lab per week. Recommended Preparation: PLSC 102 or equivalent. Typically Offered: Fall.

PLSC 340 Nursery Management (3 credits)

Management of commercial nurseries from plant propagation through sale of the plants. Cooperative: open to WSU degree-seeking students. (Alt/years)

PLSC 398 (s) Internship (1-6 credits, max 6)

Graded P/F.

Prereqs: Department Permission

PLSC 400 (s) Seminar (1 credit)

PLSC 401 Plant Physiology (3 credits)

Application of physiological principles to the management of plants in agronomic, horticultural, and forest systems. (Spring, alt/even years)

Prereqs: PLSC 205 or BIOL 115 and BIOL 115L or Permission

PLSC 402 Undergraduate Research in Plant Science (1-6 credits, max 6)

This course offers credits to students interested in gaining first-hand experience in today's plant research. Each student will acquire research skills by conducting laboratory or field research on a well-defined topic agreed to by the student and by a faculty supervisor. Students must receive permission from that supervisor prior to enrolling. This course is open to all undergraduates and may be taken multiple times.

Prereqs: PLSC 205

PLSC 404 (s) Special Topics (1-16 credits)

Credit arranged

PLSC 405 (s) Professional Development (1-16 credits)

Credit arranged

PLSC 407 Field Crop Production (3 credits)

Management and use of crops in Idaho and the Northwest.

PLSC 408 Cereal Science (3 credits)

Crop history and biology of major cereal crops, emphasizing cool season cereals. Recommended Preparation: BIOL 115.

PLSC 410 Invasive Plant Biology (3 credits)

Joint-listed with PLSC 510

Biology, ecology, and physiology of weeds with emphasis on crop and weed interactions. Requirements for graduate credit include comprehensive term paper and class presentation on weed-crop interaction. Two lectures and one 3-hour lab per week. Cooperative: open to WSU degree-seeking students. (Alt/years)

PLSC 419 Plant Community Restoration Methods (2 credits)

Students will participate in classroom discussions surrounding topics that are important to modification and implementation of a restoration plan. Students will also participate in practical, hands-on activities during laboratory periods. Those activities include operation of equipment for cultivation and seeding, calibration of herbicide sprayers, calibration of drills, transplanting techniques, monitoring and evaluation of restoration projects, and visits to restoration projects.

Prereqs: REM 221 or equivalent, or Permission.

PLSC 433 Plant Tissue Culture Techniques (3 credits)

Joint-listed with PLSC 533

Laboratory-oriented course involving tissue culture techniques with an emphasis on regenerating herbaceous and woody plant species from organs or tissues. Requirements for graduate credit include completion of a special project and report. One lecture and 5 hours of lab per week. Recommended Preparation: PLSC 300. (Alt/years)

PLSC 438 Pesticides in the Environment (3 credits)

General Education: Senior Experience

Cross-listed with ENT 438, SOIL 438

Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Recommended Preparation: CHEM 275.

PLSC 440 Advanced Laboratory Techniques (4 credits)

Cross-listed with GENE 440

Intensive hypothesis-driven laboratory course that will prepare the student for research in molecular biology; emphasis on areas of microbial physiology, microbial genetics, immunology, and pathogenic microbiology. (Spring only)

Prereqs: BIOL 250

PLSC 444 Forage and Grassland Management (3 credits)

Joint-listed with PLSC 544

This course will discuss the biology of plants and the application of agronomic principles to growth, development and management of integrated forage crop and livestock systems. We will focus on pasture and grazing, alfalfa hay, cover crops, and corn silage production, management, storage, and utilization. Special project and report required for graduate credit.

Prereqs: PLSC 205

PLSC 446 Plant Breeding (3 credits)

Joint-listed with PLSC 546

Application of genetic principles to improvement of crop plants. Additional term paper required for graduate credit. (Alt/years)

Prereqs: GENE 314 or equivalent

PLSC 451 Vegetable Crops (3 credits)

Joint-listed with PLSC 551

Production, physiology, storage, and marketing of major and minor vegetable, herb, and spice crops from a worldwide perspective. Recommended preparation: PLSC 201, PLSC 205, PLSC 300 or equivalents. Cooperative: available to WSU degree-seeking students.

Prereqs: PLSC 102 or equivalent

PLSC 476 Cell Biology (3 credits)

Joint-listed with PLSC 576

Introduction to the organization and function of the major components of the eukaryotic cell; emphasis on the composition of cells, the structures and assembly processes of molecules that make up cells, diversity of cell types found in multicellular organisms, and how common interacting processes are coordinately controlled. Extra oral and/or written assignments required for graduate credit. (Spring, alt/years)

Prereqs: BIOL 115 and either BIOL 300 or BIOL 380

PLSC 480 Field Trip (1 credit, max 3)

Three-day field trip to production areas.

Prereqs: Permission

PLSC 486 Plant Biochemistry (3 credits)

Joint-listed with PLSC 586

An in-depth introduction to metabolic processes carried out by plants, some fungi, and some alga with emphasis on cell wall synthesis, hormone synthesis, and photosynthesis. Extra oral and/or written assignments required for graduate credit. (Spring, alt/years)

Prereqs: BIOL 300 or BIOL 380

PLSC 488 Genetic Engineering (3 credits)

Cross-listed with GENE 488

Joint-listed with GENE 588 and PLSC 588

Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)

Prereqs: GENE 314 or BIOL 310

PLSC 490 Potato Science (3 credits)

Joint-listed with PLSC 590

History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Comprehensive term paper and class presentation on selected topic required for graduate credit. Cooperative: open to WSU degree-seeking students.

PLSC 498 (s) Internship (1-16 credits)

Credit arranged

PLSC 499 (s) Directed Study (1-16 credits)

Credit arranged

PLSC 500 Master's Research and Thesis (1-16 credits)

Credit arranged

PLSC 501 (s) Seminar (1-16 credits)

Credit arranged

PLSC 502 (s) Directed Study (1-16 credits)

Credit arranged

PLSC 503 (s) Workshop (1-16 credits)

Credit arranged

PLSC 504 (s) Special Topics (1-16 credits)

Credit arranged

PLSC 505 (s) Professional Development (1-16 credits)

Credit arranged

PLSC 510 Invasive Plant Biology (3 credits)

Joint-listed with PLSC 410

Biology, ecology, and physiology of weeds with emphasis on crop and weed interactions. Requirements for graduate credit include comprehensive term paper and class presentation on weed-crop interaction. Two lectures and one 3-hour lab per week. PLSC 410 is cooperative: open to WSU degree-seeking students. (Alt/years)

PLSC 523 Potato Industry Field Trip (1 credit)

Graduate students will participate in a multi-day tour across Southern Idaho interacting with all aspects of the Idaho Potato Industry: production, storage, fresh pack, processing, equipment, IPM, irrigation, food science, potato breeding, seed production, marketing, and agri-business. Tour stops will include interaction with growers, processors and packers, equipment manufacturers, the Idaho Potato Commission, and Research & Extension faculty and staff. Typically Offered: Summer. **Prereqs:** by permission and enrolled in a graduate program

PLSC 533 Plant Tissue Culture Techniques (3 credits)

Joint-listed with PLSC 433

Laboratory-oriented course involving tissue culture techniques with an emphasis on regenerating herbaceous and woody plant species from organs or tissues. Requirements for graduate credit include completion of a special project and report. One lecture and 5 hours of lab per week. Recommended Preparation: PLSC 300. (Alt/years)

PLSC 542 Biochemistry (3 credits)

Maximum of 7 credits in any combination of BIOL 380, PLSC 542, and BIOL 554. Intermediate biochemistry; introduction to metabolism and the chemical and physical properties of biomolecules. (Fall only)

Prereqs: CHEM 372; BIOL 380 or

Coreqs: CHEM 302 or 306; or Permission

PLSC 544 Forage and Grassland Management (3 credits)

Joint-listed with PLSC 444

This course will discuss the biology of plants and the application of agronomic principles to growth, development and management of integrated forage crop and livestock systems. We will focus on pasture and grazing, alfalfa hay, cover crops, and corn silage production, management, storage, and utilization. Special project and report required for graduate credit.

Prereqs: PLSC 205

PLSC 546 Plant Breeding (3 credits)

Joint-listed with PLSC 446

Application of genetic principles to improvement of crop plants. Additional term paper required for graduate credit. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: GENE 314 or equivalent

PLSC 551 Vegetable Crops (3 credits)

Joint-listed with PLSC 451

Production, physiology, storage, and marketing of major and minor vegetable, herb, and spice crops from a worldwide perspective. Recommended preparation: PLSC 201, PLSC 205, PLSC 300 or equivalents. Cooperative: open to WSU degree-seeking students.

Prereqs: PLSC 102 or equivalent

PLSC 576 Cell Biology (3 credits)

Joint-listed with PLSC 476

Introduction to the organization and function of the major components of the eukaryotic cell; emphasis on the composition of cells, the structures and assembly processes of molecules that make up cells, diversity of cell types found in multicellular organisms, and how common interacting processes are coordinately controlled. Extra oral and/or written assignments required for graduate credit. (Spring, alt/years)

Prereqs: BIOL 115 and either BIOL 300 or BIOL 380

PLSC 586 Plant Biochemistry (3 credits)

Joint-listed with PLSC 486

An in-depth introduction to metabolic processes carried out by plants, some fungi, and some alga with emphasis on cell wall synthesis, hormone synthesis, and photosynthesis. Extra oral and/or written assignments required for graduate credit. (Spring, alt/years)

Prereqs: BIOL 300 or BIOL 380

PLSC 588 Genetic Engineering (3 credits)

Cross-listed with GENE 588

Joint-listed with GENE 488 and PLSC 488

Techniques and theory underlying practical genetic modifications of plants, microbes, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: BIOL 380. (Fall only)

Prereqs: GENE 314 or BIOL 310

PLSC 590 Potato Science (3 credits)

Joint-listed with PLSC 490

History, botanical characteristics, seed physiology and production, plant population, physiology of growth, and pest management; factors influencing maturation, harvest, yield, grade, bruise control, storage, and quality maintenance; economics of production and research on a global basis. Comprehensive term paper and class presentation on selected topic required for graduate credit. Cooperative: open to WSU degree-seeking students.

PLSC 597 (s) Practicum (1-16 credits)

Credit arranged

PLSC 598 (s) Internship (1-16 credits)

Credit arranged

PLSC 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

PLSC 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Political Science (POLS)

POLS 101 American National Government (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

This class will introduce students to the fundamentals of the American political system. Typically Offered: Fall and Spring.

POLS 200 (s) Seminar (1-16 credits)

Credit arranged

POLS 203 (s) Workshop (1-16 credits)

Credit arranged

POLS 204 (s) Special Topics (1-16 credits)

Credit arranged

POLS 205 Introduction to Comparative Politics (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Basic structures, patterns, and sociocultural environment of foreign political systems; includes case studies of the government and politics in selected countries. Typically Offered: Spring.

POLS 208 Introduction to Political Philosophy (3 credits)

This course will introduce students to the practice and diverse products of political philosophy or normative political theory. Unlike theories in other areas of Political Science, which are typically focused on attempts to provide explanations and predictions regarding empirical phenomena, political philosophy is focused more on normative questions regarding how we ought to arrange our political affairs and how we ought to understand key morally laden concepts, such as obligation, rights, justice, and equality.

POLS 209 Introduction to American Politics and Policy (3 credits)

This course is an introduction to American politics using public policy as a lens. The basic goals of this course are to explain how American political institutions and the electorate shape public policy and vice versa.

POLS 235 Political Research Methods and Approaches (3 credits)

Introduction to the study of politics, including scope of the discipline, principal fields, research design, and methods of political research and analysis.

POLS 237 Introduction to International Politics (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Survey of approaches used to describe and explain conflict and cooperation among states in the international system; special emphasis on games of strategic interaction. Typically Offered: Fall.

POLS 299 (s) Directed Study (1-16 credits)

Credit arranged Graded P/F.

Prereqs: Permission.

POLS 307 Institutions of the European Union (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Cross-listed with FLEN 307

A cross-cultural examination of the European Union, its history, evolution, and current functioning; social, cultural, and political differences among union partners; economic structure and demographics; business culture.

POLS 331 American Political Parties and Elections (3 credits)

General Education: Social and Behavioral Ways of Knowing
Development and present character of American political parties and of electoral system, functions of parties in periods of relative consensus and of critical choice regarding fundamental principles, party reform, and future prospects for party system.

POLS 332 American Congress (3 credits)

General Education: Social and Behavioral Ways of Knowing
Roles and functions of Congress in the American political system, theories of representation, recruitment of legislators, Congressional organization and behavior, power structure, relationship to the executive, courts, interest groups, and public.

POLS 333 American Political Culture (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing
Relation of public opinion and political action and affiliation to broad economic, social, religious, and intellectual developments.

POLS 336 Political Research Methods and Approaches II (3 credits)

Course covers advanced research design, social science quantitative methods and data collection issues.

Prereqs: POLS 235.

POLS 338 American Foreign Policy (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Analysis of how key decision makers, such as the President and Congress, convert inputs from the international, national, and societal systems into foreign policy outputs. Typically Offered: Fall.

Prereqs: None

POLS 352 Philosophy, Politics, and Economics (3 credits)

Cross-listed with PHIL 352

This course will introduce students to the topics and methods of Philosophy, Politics, and Economics (PPE). The approach will be interdisciplinary, with the aim of investigating and illustrating how and why these three disciplines are indispensable to addressing both the normative and factual issues each poses on its own. The course will cover basic methods in rational choice theory, game theory, social choice theory, and political philosophy to explore problems pertaining to decision-making, coordination, cooperation, and justice. The texts will include both traditional and contemporary writings on these issues.

POLS 364 Politics of the Environment (3 credits)

Cross-listed with NRS 364

Political factors that influence formation, implementation, and impact of public policies aimed at protecting the environment.

POLS 381 European Politics (3 credits)

General Education: International, Social and Behavioral Ways of Knowing
Examination of political processes in European parliamentary systems; topics include parties and elections, coalition formation and dissolution, public policy, and the dynamics of the European Union.

POLS 384 African Politics (3 credits)

Cross-listed with IS 384

Exploration of the politics of African countries, beginning with the historical roots of colonialism and decolonization, but concentrating on contemporary issues of state building, war and conflict, development, democratization, and international and regional relations.

POLS 385 Political Psychology (3 credits)

General Education: International

The main goal of this course is to provide students with a general understanding of the cognitive biases that influence the choices and behavior of individuals in the realm of global politics. Topics include but are not limited to: loss aversion, personality and beliefs, group influence, analogical reasoning, and emotion. Substantive examples will be drawn from research in International Relations and Comparative Politics. As such, the course will cover the psychology of international conflict, civil war, voting behavior, and public opinion. Typically Offered: Spring.

Prereqs: None

POLS 400 (s) Seminar (1-16 credits)

Credit arranged

POLS 403 (s) Workshop (1-16 credits)

Credit arranged

POLS 404 (s) Special Topics (1-16 credits)

Credit arranged

POLS 410 Game Theory (3 credits)

Joint-listed with POLS 510

The study of strategic interaction in which an outcome depends upon an individual's own decision and the choices made by others; introduction to the basic tools of game theory used to conceptualize and model political problems as games, including situations involving conflict, cooperation, contracts between agents and principals, coordination, and bargaining. Additional projects/assignments required for graduate credit.

POLS 420 Introduction to Asian Politics (3 credits)

General Education: International

Joint-listed with POLS 520

This course will offer both a country-based and thematic survey of political systems and issues in Asia. Countries to be covered will include (but not be limited to) China, Japan, India, Indonesia, Thailand, and Pakistan. The course will also cover topics such as democratization, economic development, and the changing Asian security environment. Additional projects and/or assignments required for graduate credit. Recommended Preparation: POLS 205. (Spring only)

POLS 423 Politics, Policy and Gender (3 credits)

Joint-listed with POLS 523

Examination of the gendered social construction of political processes, outputs, and public policy formation on the national and international level. Study of the historical evolution of women's participation in American politics as well as other countries. Analysis of the politics of gendered representation and political leadership in American politics and elsewhere. Additional projects/assignments required for graduate credit. Typically Offered: Fall (Even Years).

POLS 427 Modern Political Philosophy (3 credits)

Cross-listed with PHIL 427

This course will study theories in political philosophy starting from the Early Modern Period (Hobbes) and running through the present day. Typically Offered: Fall (Odd Years).

POLS 428 American Political Thought (3 credits)

Joint-listed with POLS 528

Major themes and debates in the American search for political self-understanding; topics include representative democracy, religion and politics, the frontier and its legacy, and individualism vs. communitarian claims; study of original sources (Founding Fathers, Thoreau, Lincoln, Populists) and contemporary implications. Additional projects/assignments required for graduate credit.

POLS 430 Political Participation Internship (1-9 credits, max 9)

Directed student internship as a participant-observer in the political process, work during a campaign with a candidate, party, or interest group. Graded P/F.

Prereqs: Permission.

POLS 437 American Presidency (3 credits)

Roles, power, and functions of the presidency; relationships with other structures and institutions in the U. S. political system. Additional projects/assignments required for graduate credit.

Prereqs: Senior standing or Permission.

POLS 439 Public Policy (3 credits)

Joint-listed with POLS 539

Processes by which domestic policies are formulated and administered; analysis of intentional and unintentional impact of these policies on society. Additional projects/assignments required for graduate credit.

POLS 440 (s) International Organizations and International Law (3 credits)

Cross-listed with IS 440

League of Nations, United Nations, and role of international law in international relations; the UN's contribution to international security and economic and social development.

POLS 449 World Politics and War (3 credits)

General Education: International

A critical analysis of several competing theories that explain why wars occur; some focus on the attempts to control and eliminate warfare as a tool of international diplomacy.

POLS 451 Public Administration (3 credits)

Environment of public administration, politics of organizations, public decision-making, public relations, leadership, personnel administration, financial administration, administration ethics; related topics.

POLS 458 Management Internship (1-9 credits, max 9)

Directed internship in an agency of federal, state, or local government or special projects involving federal, state, or local government. One credit for each week of internship work. Graded P/F.

Prereqs: Permission

POLS 459 Legislative Internship (1-9 credits, max 9)

Directed internship in a national, state, municipal, or corporate legislative body. Supervised work experience. Report required. Graded P/F.

Prereqs: Permission

POLS 462 Natural Resource Policy (3 credits)

Cross-listed with NRS 462

Political and institutional context for making natural resource policy; emphasis on interaction between private and public sectors and the federal, state, and tribal governments, including an examination of topical issues in natural resource politics.

POLS 467 Constitutional Law (3 credits)

Joint-listed with POLS 567

The Supreme Court as a constitutional policymaker; federal jurisdiction; constitutional principles concerning judicial review, federalism, implied powers, separation of powers, and due process. Additional projects/assignments required for graduate credit.

POLS 468 Civil Liberties (3 credits)

General Education: American Diversity

Joint-Listed: POLS 568. The Supreme Court and its role in protecting civil liberties; freedom of speech, press, and religion; due process, the Bill of Rights, and its application to the states; criminal justice. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

POLS 471 Federalism in Practice (3 credits)

Joint-listed with POLS 571

Analysis of fiscal and administrative interdependencies among governmental units in the U. S. , with an emphasis on public policies. Additional projects/assignments required for graduate credit.

POLS 474 Public Opinion and Political Behavior (3 credits)

From this course, you will understand the measurement, structure, and dynamics of public opinion, both what influences it, as well as how it shapes other aspects of politics and public life, including: the character of political attitudes, party identification, turnout and participation, and the vote decision. You will also understand different modes of political participation including conventional and non-conventional and their correlates.

POLS 480 Politics of Development (3 credits)

General Education: International

Joint-listed with POLS 580

Role of the state in development, political economy of change, transition to democracy in the Third World, problems of ethnic conflict, overpopulation, and poverty. Additional projects/assignments required for graduate credit.

POLS 487 Political Violence and Revolution (3 credits)

General Education: International

Joint-listed with POLS 587

Survey of the dominant theories attempting to understand the conditions under which humans rebel against their government; from political demonstrations and riots to terrorism to revolution; special emphasis given to the revolutions in Iran and Vietnam. Additional projects/assignments required for graduate credit.

POLS 490 Senior Experience (3 credits)

General Education: Senior Experience

Required of all political science majors; capstone course devoted to mastery of inquiry in political science research; topics will vary.

Prereqs: Senior standing and 24 credits in political science.

POLS 498 (s) Internship (1-16 credits)

Credit arranged

POLS 499 (s) Directed Study (1-16 credits, max arranged)

Credit arranged. Graded Pass/Fail.

Prereqs: Permission

POLS 500 Master's Research and Thesis (1-16 credits)

Credit arranged. Graded P/F.

POLS 501 (s) Seminar (1-16 credits)

Credit arranged. Areas normally offered include U. S. politics, U. S. foreign policy, African and Asian politics, community power and politics, U. S. political thought, public law, public administration, and political development. One 2-day field trip is authorized for the seminar in public administration.

POLS 502 (s) Directed Study (1-16 credits)

Credit arranged

POLS 503 (s) Workshop (1-16 credits)

Credit arranged

POLS 504 (s) Special Topics (1-16 credits)

Credit arranged

POLS 520 Introduction to Asian Politics (3 credits)

General Education: International

Joint-listed with POLS 420

This course will offer both a country-based and thematic survey of political systems and issues in Asia. Countries to be covered will include (but not be limited to) China, Japan, India, Indonesia, Thailand, and Pakistan. The course will also cover topics such as democratization, economic development, and the changing Asian security environment. Additional projects and/or assignments required for graduate credit.

Recommended Preparation: POLS 205. (Spring only)

POLS 523 Politics, Policy and Gender (3 credits)

Joint-listed with POLS 423

Examination of the gendered social construction of political processes, outputs, and public policy formation on the national and international level. Study of the historical evolution of women's participation in American politics as well as other countries. Analysis of the politics of gendered representation and political leadership in American politics and elsewhere. Additional projects/assignments required for graduate credit. Typically Offered: Fall (Even Years).

POLS 535 Advanced Political Science and Research Methods (3 credits)

Course covers advanced research design, social science quantitative methods and data collection issues.

POLS 539 Public Policy (3 credits)

Joint-listed with POLS 439

Processes by which domestic policies are formulated and administered; analysis of intentional and unintentional impact of these policies on society. Additional projects/assignments required for graduate credit.

POLS 552 Administrative Law and Regulation (3 credits)

Legal and judicial constraints on administration action, rule-making, adjudication, and other modes of administrative action. Additional projects/assignments required for graduate credit.

POLS 555 Public Administration Theory (3 credits)

Major writers in public administration theory and concepts such as leadership, supervision, authority, decision-making, and human relations.

POLS 556 Governmental Policy and Program Analysis (3 credits)

Techniques used to analyze policy alternatives and to evaluate program; developing program objectives, management by objectives, productivity analysis, program evaluation, and policy analysis.

POLS 557 Governmental Budgeting (3 credits)

Theory and practice of budgeting in a political environment; focus on potentials and limitations of various budgeting systems, particular viz the federal experience.

POLS 558 Research Methods for Local Government and Community Administration (3 credits)

This course will provide research tools to students interested in local and community administration. Topics will include research design, inferential statistics, regression analysis, binary dependent variable modeling with application to policy analysis and performance measurement, and program evaluation.

Prereqs: STAT 251

POLS 559 Field Based Research (3 credits)

This course gives in-service MPA graduate students the opportunity to conduct applied research under faculty supervision. Research projects will be selected according to the needs of the agency, student interest, and with faculty approval.

POLS 565 Local Government Law (3 credits)

The course examines the major legal issues involving local government, including tax and spending, public employment contracts, delivery of services and tort liability. Also covered are the relationship problems such as inter-local conflicts and the manner in which state governments and the federal government impact local government. This course also will provide practical instruction on the functions and procedures of municipal governing bodies, municipal courts, and planning and zoning boards.

POLS 566 Local Economic Development (3 credits)

Local economic development (LED) is an essential dimension of communities' wellbeing. This course focuses on local economic development theories, analytical tools, and strategies and their application including analysis of local economy and formulation of local economic development plan. It prepares students interested in a career position in local economic development or in local government and nonprofit fields in general.

Prereqs: Graduate standing

POLS 567 Constitutional Law (3 credits)

Joint-listed with POLS 467

The Supreme Court as a constitutional policymaker; federal jurisdiction; constitutional principles concerning judicial review, federalism, implied powers, separation of powers, and due process. Additional projects/assignments required for graduate credit.

POLS 568 Civil Liberties (3 credits)

General Education: American Diversity

Joint-listed with POLS 468

The Supreme Court and its role in protecting civil liberties; freedom of speech, press, and religion; due process, the Bill of Rights, and its application to the states; criminal justice. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

POLS 570 Public Sector Contract Management (3 credits)

This course introduces students to the practices that are employed to solicit and manage government contracts, the importance of successfully managing contractual relationships with vendors, and about contract dispute resolution. It also contains a general introduction to contract law.

POLS 572 Local Government Politics and Administration (3 credits)

Joint-listed with POLS 472

Politics, structure, and problems of American cities and other local governments; focus on the urban political economy, the fiscal and social challenges, and the links between public and private sectors; changing social and political functions of American cities and metropolitan fragmentation. Additional projects/assignments required for graduate credit.

POLS 575 Public Personnel Administration (3 credits)

Personnel administration in public agencies; history of the personnel and merit systems; recruitment; selection, training, and evaluation of administrators; collective bargaining and political activity in public service; personnel administration and democracy.

POLS 580 Politics of Development (3 credits)

General Education: International

Joint-listed with POLS 480

Role of the state in development, political economy of change, transition to democracy in the Third World, problems of ethnic conflict, overpopulation, and poverty. Additional projects/assignments required for graduate credit.

POLS 587 Political Violence and Revolution (3 credits)

Joint-listed with POLS 487

Survey of the dominant theories attempting to understand the conditions under which humans rebel against their government; from political demonstrations and riots to terrorism to revolution; special emphasis given to the revolutions in Iran and Vietnam. Additional projects/assignments required for graduate credit.

POLS 598 (s) Internship (1-16 credits)

Credit arranged

POLS 599 (s) Research (1-16 credits)

Credit arranged

POLS 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged. Graded P/F.

Psychology (PSYC)

PSYC 101 Introduction to Psychology (3 credits)

General Education: Social and Behavioral Ways of Knowing

Intro to psychology topics, including sensation and perception, learning and thinking, motivation, personality and adjustment, social processes, psychological testing; emphasis on fundamental principles. Typically Offered: Fall and Spring.

PSYC 200 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: PSYC 101.**PSYC 201 Survey of Contemporary Psychology (1 credit)**

Introduces students to the psychology major, the psychology faculty, and current research in psychology. Each week a different faculty member will discuss the history, methods, major findings, and recent developments in their main areas of study.

Prereqs: PSYC 101.**PSYC 203 (s) Workshop (1-16 credits)**

Credit arranged

Prereqs: PSYC 101.**PSYC 204 (s) Special Topics (1-16 credits)**

Credit arranged

Prereqs: PSYC 101.**PSYC 215 Quantitative Methods in Psychology (3 credits)**

Primarily for majors in psychology. Introduction to data analytic techniques used by psychologists. Typically Offered: Fall, Spring.

Prereqs: PSYC 101 and completion of a math or statistics course (MATH 108, MATH 123, MATH 130, MATH 143, MATH 160, MATH 170, STAT 153, or STAT 251).**PSYC 218 Introduction to Research in the Behavioral Sciences (4 credits)**

Primarily for majors in psychology. Logic and method of empirical research in the behavioral sciences; design, execution, and reporting of psychological experimentation and research. Three lectures and one 2-hour lab per week.

Prereqs: PSYC 101**Prereqs or Coreqs:** PSYC 215 or STAT 251**PSYC 299 (s) Directed Study (1-16 credits)**

Credit arranged

Prereqs: PSYC 101**PSYC 305 Developmental Psychology (3 credits)**

Conception through late adolescence; genetics, anatomy, physiology, biological changes during development, learning, socialization, cognition, and personality.

Prereqs: PSYC 101 or EDCI 301**PSYC 310 Psychology of Personality (3 credits)**

Theories of personality, basic concepts, techniques of measurement, and experimental methods; the normal personality.

Prereqs: PSYC 101**PSYC 311 Abnormal Psychology (3 credits)**

Nature, causes, treatment, and prevention of patterns of emotional disturbances and personality disorders, including neuroses and psychoses.

Prereqs: PSYC 101**PSYC 315 Psychology of Women (3 credits)**

General Education: American Diversity

This course will cover the empirical research regarding gender differences in domains that are of particular interest to women. These topics will include but not be limited to women in the workplace, cognitive and socialization differences, work-family issues, sexuality, childhood, adolescence, motherhood, identity, and intimate relationships. Typically Offered: Fall.

Prereqs: PSYC 101**PSYC 319 Environmental Psychology (3 credits)**

This course will cover the empirical social science research on a variety of topics within environmental psychology. Specific topics include: conservation, population psychology, built environments, human territoriality, personal space, crowding, environmental stressors, environmental symbolism, cognitive processes, sustainability of spaces and communities.

Prereqs: PSYC 101**PSYC 320 Introduction to Social Psychology (3 credits)**

Theories, concepts, and research on the social bases of behavior and social interaction; topics of personal and social relevance, aggression, prejudice, altruism and helping behavior, interpersonal attraction, behavior in groups, conformity, attitudes, authoritarianism, and obedience to authority.

Prereqs: PSYC 101**PSYC 325 Cognitive Psychology (3 credits)**

Joint-listed with PSYC 525

Survey and analysis of major topics in field; emphasis on contemporary research and theory; related topics in perception, memory, and information processing and transformation. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 330 Human Sexuality (3 credits)**

Joint-listed with PSYC 530

Introduction to the fundamentals of human sexuality; emphasis on current trends and research. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 345 Group Dynamics (3 credits)**

Joint-listed with PSYC 545

This course will cover the empirical research regarding group dynamics, including topics of leadership, cohesion, team building, understanding group level data, problem solving, group mood, group creativity, transactive memory, information processing, and other small group processes. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 347 Survey of Helping Professions (3 credits)**

Survey of the helping professions involving psychological assistance, including clinical, counseling, school, social work, psychiatric nursing, chaplaincy/ministerial, non-traditional helpers, and peer helpers. Analysis of counseling methods, psychological testing, outcome studies, and professional issues.

Prereqs: PSYC 101**PSYC 360 Positive Psychology (3 credits)**

The scientific study of human strengths, life fulfillment, and optimal functioning. Topics include well-being, happiness, optimism, resilience, positive relationships, life meaning, gratitude, and positive development across the lifespan.

Prereqs: PSYC 101

PSYC 372 Physiological Psychology (3 credits)

Physiological bases of animal and normal human behavior.
Recommended Preparation: BIOL 102/BIOL 102L or higher.

Prereqs: PSYC 101

PSYC 380 Activities-Based Therapies (3 credits)

Techniques based on physical and recreational activities, including crafts, individual and team sports, recreational reading and game-playing. The goal of such approaches is to assist clients in their return to an adaptive and or comfortable level of functioning. Both physical and psychological functioning are emphasized.

Prereqs: PSYC 101 or Instructor Permission

PSYC 390 Psychology of Learning (3 credits)

Experimental literature of the nature and conditions of classical and operant conditioning, verbal learning, and cognition.

Prereqs: PSYC 101

PSYC 400 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: PSYC 101.

PSYC 403 (s) Workshop (1-16 credits)

Credit arranged

Prereqs: PSYC 101.

PSYC 404 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: PSYC 101.

PSYC 405 (s) Professional Development (1-16 credits)

Credit arranged

PSYC 414 Traumatic Events: Preparation, Intervention, Evaluation (3 credits)

Cross-listed with ORGS 414

Traumatic Events (TEs) range from local to large scale human-induced or catastrophic natural disasters (violent crimes, major accidents, weather events, etc.). This course is designed to address integral response elements: (a) preparation (e. g. , organizing, planning, training, equipping) (b) intervention (e. g. , multi-agency coordination, logistics, triage, first & secondary responses, volunteers, incident command, communication, mitigation, psychological first aid, media, safety, security) (c) evaluation (e. g. , after-action reports, lessons learned, hot wash, best practices, research).

Prereqs: PSYC 101 or Instructor Permission

PSYC 415 History and Systems of Psychology (3 credits)

General Education: Senior Experience

History of psychology as a field of scientific inquiry; overview of development of schools of thought, prominent figures, and key theories. Recommended Preparation: Two upper-division psychology courses.

Prereqs: PSYC 101

PSYC 416 Industrial/Organizational Psychology (3 credits)

Joint-listed with PSYC 516

Application of psychological principles to the study of work behavior; includes topics such as personnel selection, performance appraisal, training, work motivation, teams, leadership, and job attitudes. Additional work required for graduate credit.

Prereqs: PSYC 101

PSYC 419 Adult Development and Aging (3 credits)

General Education: American Diversity

Analysis of change from early adulthood through death in the areas of social, cognitive, and physical development; examination of theories, concepts, and research in the area of lifespan development; study of the problems of aging, plasticity of functioning, and ingredients of successful aging. Typically Offered: Spring.

Prereqs: PSYC 101

PSYC 420 Personality and Social Development (3 credits)

Personality and social development from birth through adolescence, including such topics as attachment, aggression, impulse control, sex differences, self concept, moral development, and effects of parental child rearing styles.

Prereqs: PSYC 101 and PSYC 305, or Permission

PSYC 421 Cognitive Development (3 credits)

Intellectual development of child from birth to maturity, mechanisms of intellectual growth, relationship between language and cognitive development.

Prereqs: PSYC 101 and PSYC 305, or Permission

PSYC 422 Disorders of Childhood and Adolescence (3 credits)

Overview of psychological disorders that affect children and adolescents; emphasis on how childhood mental illness is defined, diagnosed, and treated within multiple theoretical perspectives. Examines how multiple, interacting events shape both adaptive and maladaptive developmental outcomes.

Prereqs: PSYC 101 and PSYC 305, or Permission.

PSYC 425 Psychology of Action (3 credits)

The psychology of action is about the mind-body connection: what are the underlying psychological and neurological processes that enable us to translate our intentions into action, and that prevent us from doing things as well as we would like? Action control is a fundamental topic in psychology, neuroscience, and related disciplines, important for rehabilitation, training, design of usable devices, and insight into the functioning of the nervous system as a whole. Topics include perceptual-motor integration, skill acquisition, and planning and generation of simple and complex movements.

Prereqs: PSYC 101 and PSYC 218

PSYC 430 Tests and Measurements (3 credits)

Review of the major principles of test development including test construction and methods for determining test validity and reliability, some of the currently used scales, and study of scaling methods such as Thurstone scales, Likert scales, and semantic differentials. Recommended Preparation: STAT 251.

Prereqs: PSYC 101

PSYC 435 Personnel (3 credits)

Cross-listed with ORGS 435

Joint-listed with PSYC 535 and ORGS 535

Review of theory and methods related to personnel issues; includes topics such as individual differences, selection, psychometrics, compensation, training programs, and performance appraisal. Additional work required for graduate credit.

Prereqs: PSYC 101

PSYC 440 Psychology of Judgement and Decision Making (3 credits)

This course is an introduction to the psychological study of judgment and decision-making. By examining both laboratory and real-world research, we will learn how people (both laypersons and experts) actually make decisions and judgments and how various biases and heuristics can influence their judgments and decisions.

Prereqs: PSYC 101

PSYC 441 Human Relations in the Workplace (3 credits)

Cross-listed with ORGS 441

Joint-listed with PSYC 541 and ORGS 541

Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit.

Prereqs: PSYC 101

PSYC 444 Sensation and Perception (3 credits)

Fundamental processes and variables in sensory, perceptual, and cognitive experiences of humans.

Prereqs: PSYC 101 and PSYC 218

PSYC 446 Engineering Psychology (3 credits)

Application of principles of experimental psychology to analysis of interaction of the human operator with machine systems and work environments; emphasis on psychological aspects of human performance. Cooperative: open to WSU degree-seeking students.

Prereqs: PSYC 101; and PSYC 218 or STAT 301; or Permission

PSYC 450 Organizational Systems and Projects (3 credits)

Cross-listed with ORGS 450

Joint-listed with ORGS 550, PSYC 500

An exploration of Systems approaches to organizational performance. Includes coverage of goal setting, outcome determination, process management, performance feedback and evaluation, training support, and system revision/improvement. Additional project/assignments required for graduate credit. Typically Offered: Varies.

Prereqs: PSYC 101

PSYC 456 Psychology of Emotion (3 credits)

Theories of emotion; biological and social variables influencing the activation of emotion.

Prereqs: PSYC 101

PSYC 470 Introduction to Chemical Addictions (3 credits)

Understanding how individuals develop an addiction to psychoactive chemicals and how they recover from such an addiction; recognition, assessment, and treatment of various chemical addictions and how to do interventions for addicted individuals and their families; topics include drugs of abuse, symptoms and warning signs of chemical addiction, assessment, codependency, interventions, treatment, and recovery. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 472 Introduction to the Pharmacology of Psychoactive Drugs (3 credits)

Joint-listed with PSYC 572

Overview of neural mechanisms, behavioral responses, and addictive aspects of psychoactive drugs. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 473 Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB (3 credits)

Joint-listed with PSYC 573

Overview of HIV/AIDS, TB, and other STDs; preparing counselors to work with clients to prevent these diseases or counsel clients who have acquired these diseases; making counselors examine issues related to human sexuality and biases about sexually related topics. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 474 Record Keeping and Case Management in Chemical Addictions Counseling (3 credits)

Joint-listed with PSYC 574

Exploration and examination of the sequence of events and services that clients encounter as they begin and move through the treatment process in a typical addictions treatment setting, as outlined in the Twelve Core Functions and Global Criteria of the International Certification Reciprocity Consortium (ICRC); study of the Twelve Core Functions and the Addiction Counseling Competencies relevant to each area. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 475 Professional Ethics in Addictions Counseling (3 credits)

Joint-listed with PSYC 581

Overview of ethical issues and decision making related to addictions counseling; ethics related to harm reduction models and other issues. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 476 Relapse Prevention in Chemical Addictions Counseling (3 credits)

Joint-listed with PSYC 576

Overview of addictions relapse, issues and triggers related to relapse, prevention of relapse, and issues related to addictions relapse in general. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 478 Individual and Group Therapy Techniques in Chemical Addictions Counseling (3 credits)

Joint-listed with PSYC 578

Techniques related to individual and group counseling of chemical addictions clients; helping skills such as active listening, problem solving, paraphrasing; numerous role plays and other practicum exercises; information about group therapy with actual experience of being part of a group. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 482 Client Screening, Assessment, and Placement (3 credits)

Joint-listed with PSYC 582

This course is designed to provide a comprehensive overview of substance abuse screening and assessment. This includes information related to interviewing techniques, substance abuse diagnosis, testing instruments, client placement, and issues or problems that influence the assessment environment. Additional projects/assignments required for graduate credit. Prereq for 482: PSYC 101 and PSYC 478. Prereq for 582: PSYC 578

PSYC 494 (s) Psychology Research Training (1-16 credits)

Credit arranged. Supervised experience in conducting psychological research. Available topics vary depending on current faculty research interests. Recommended preparation: PSYC 218.

Prereqs: PSYC 101 and Permission

PSYC 497 (s) Practicum in Instruction (1-3 credits, max 6)

Tutoring and/or instructional services performed by advanced students under faculty supervision.

Prereqs: PSYC 101 and Permission

PSYC 498 (s) Internship (1-6 credits, max arranged)

Directed internship in an approved setting that features psychological applications.

Prereqs: PSYC 101 and Permission

PSYC 499 (s) Directed Study (1-16 credits)

Credit arranged

Prereqs: PSYC 101

PSYC 500 Master's Research & Thesis (1-16 credits)

Credit arranged

PSYC 501 (s) Seminar (1-16 credits)

Credit arranged

PSYC 502 (s) Directed Study (1-16 credits)

Credit arranged

PSYC 503 (s) Workshop (1-16 credits)

Credit arranged

PSYC 504 (s) Special Topics (1-16 credits)

Credit arranged

PSYC 509 Human Factors in Engineering Design (3 credits)

Application of psychological principles to engineering and design; psychological models and principles from areas of perception, cognition, and information processing; the design process; display and control design; work station layout and system integration; environmental factors; safety; mental workload; human-computer interaction; and current research topics. Recommended preparation: PSYC 325 or PSYC 535; PSYC 444; and PSYC 446. Cooperative: open to WSU degree-seeking students.

PSYC 512 Research Methods (3 credits)

Philosophy of research, types of design, data analysis, research report.

Prereqs: PSYC 218 or equivalent, or Permission**PSYC 513 Advanced Research Methods (3 credits)**

Types of research designs and data analyses; application of principles of design and analysis to real-world problems; and use of computer packages for data analysis.

Prereqs: Permission**PSYC 516 Industrial/Organizational Psychology (3 credits)**

Joint-listed with PSYC 416

Application of psychological principles to the study of work behavior; includes topics such as personnel selection, performance appraisal, training, work motivation, teams, leadership, and job attitudes. Additional work required for graduate credit.

Prereqs: PSYC 101**PSYC 525 Cognitive Psychology (3 credits)**

Joint-listed with PSYC 325

Survey and analysis of major topics in field; emphasis on contemporary research and theory; related topics in perception, memory, and information processing and transformation. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 526 Cognitive Neuroscience (3 credits)**

Examine research in human and animal cognition and its neurological basis. Material covered will include the study of normal cognitive processes in humans with noninvasive behavioral and physiological techniques (e. g. , reaction times, fMRI, EEG), the study of brain-injured patients, behavioral and neurophysiological research in animals, and the comparative analyses of cognitive processes across organisms. Computational approaches towards cognitive and neural processing will also be addressed. A selection of the following topics will be covered: perception, object recognition, attention, memory, spatial cognition, motor control, language, executive control, and development. Recommended Preparation: PSYC 325.

PSYC 541 Human Relations in the Workplace (3 credits)

Cross-listed with ORGS 541

Joint-listed with PSYC 441 and ORGS 441

Overview of the general theory and methods of organizational effectiveness; focus on how individual or group behavior is affected by the organizational environment; includes topics such as work motivation, leadership, teams, culture/climate, and job attitudes. Additional assignments/projects required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: PSYC 101**PSYC 545 Group Dynamics (3 credits)**

Joint-listed with PSYC 345

This course will cover the empirical research regarding group dynamics, including topics of leadership, cohesion, team building, understanding group level data, problem solving, group mood, group creativity, transactive memory, information processing, and other small group processes. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 550 Training and Performance Support (3 credits)**

Cross-listed with ORGS 550

Joint-listed with PSYC 450 and ORGS 450

Review of applicable theory and methods for developing organizational training programs and performance support systems; emphasis will be on conducting needs analyses, development of systems and training programs to serve needs, and evaluation of program outcomes. Additional project/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 552 Ergonomics and Biomechanics (3 credits)**

Principles of anthropometry, biomechanics, and work physiology applied to workplace. Cooperative: open to WSU degree-seeking students.

PSYC 561 Human-Computer Interaction (3 credits)

Overview of human-computer interaction (HCI) topics, including user models, dialog, display design, usability, software development, groupware, and multimedia. Recommended Preparation: PSYC 446. Cooperative: Open to WSU degree-seeking students.

PSYC 562 Advanced Human Factors (3 credits)

Review of topics and theories germane to human factors such as performance measurement systems, design specifications, research issues, controls and displays, human reliability, and illumination.

Cooperative: open to WSU degree-seeking students.

Prereqs: PSYC 446, and STAT 431; or Permission**PSYC 572 Introduction to the Pharmacology of Psychoactive Drugs (3 credits)**

Joint-listed with PSYC 472

Overview of neural mechanisms, behavioral responses, and addictive aspects of psychoactive drugs. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 573 Blood and Airborne Pathogens: HIV/STDs/Hepatitis/TB (3 credits)**

Joint-listed with PSYC 473

Overview of HIV/AIDS, TB, and other STDs; preparing counselors to work with clients to prevent these diseases or counsel clients who have acquired these diseases; making counselors examine issues related to human sexuality and biases about sexually related topics. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101

PSYC 578 Individual and Group Therapy Techniques in Chemical Addictions Counseling (3 credits)

Joint-listed with PSYC 478

Techniques related to individual and group counseling of chemical addictions clients; helping skills such as active listening, problem solving, paraphrasing; numerous role plays and other practicum exercises; information about group therapy with actual experience of being part of a group. Additional projects/assignments required for graduate credit.

Prereqs: PSYC 101**PSYC 582 Client Screening, Assessment, and Placement (3 credits)**

Joint-listed with PSYC 482

This course is designed to provide a comprehensive overview of substance abuse screening and assessment. This includes information related to interviewing techniques, substance abuse diagnosis, testing instruments, client placement and issues or problems that influence the assessment environment. Additional projects/assignments required for graduate credit. Prereq for 482: PSYC 101 and PSYC 478 Prereq for 582: PSYC 578

PSYC 596 Comprehensive Exam (1 credit)

Capstone integration and comprehensive examination of material in psychology master's degree program.

PSYC 597 (s) Practicum (1-16 credits)

Credit arranged

Prereqs: Permission**PSYC 598 (s) Internship (1-16 credits)**

Credit arranged

PSYC 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission**PSYC 600 Doctoral Research and Dissertation (1-45 credits)**

Credit arranged

Rangeland Ecology & Management (REM)

REM 151 Rangeland Principles (3 credits)

Rangelands are vast landscapes that cover most of western North America and the earth. Students will examine the ecological principles that cause these grasslands, shrublands, woodlands and deserts to change or stay the same. How humans use and manage these ecosystems will also be explored. The modern challenges of rangeland management must be met with broad thinking and new, sustainable practices to maintain and restore rangelands and the human communities that rely on them. Course requires in-class projects and field experience(s).

REM 200 (s) Seminar (1-16 credits)

Credit arranged

REM 203 (s) Workshop (1-16 credits)

Credit arranged

REM 204 (s) Special Topics (1-16 credits)

Credit arranged

REM 252 Wildland Plant Identification (2 credits)

Develop skills to identify and classify major rangeland plants. Focus is on identification of grasses, forbs, and shrubs. Discussions will also encompass the ecological roles of wildland plants and the ecosystem classification. This course includes a 1-day field trip. Required for REM majors. (Spring only)

REM 253 Wildland Plant Identification Field Studies (1 credit)

Develop skills to identify rangeland plants in the field. Focus is on identification of grasses, forbs, and shrubs in natural settings.

Exploration will include ecosystem roles of wildland plants and developing site descriptions. This course includes a 4-day field trip at the beginning of the fall semester. Recommended to take REM 252 (Wildland Plant Identification) before or after this field class.

Prereqs: REM 252**REM 280 Introduction to Wildland Restoration (2 credits)**

History and overview of the ecological, social, and economic aspects of wildland restoration using case studies. Students will explore approaches and philosophies towards restoring and rehabilitating wildlands that have been damaged through natural forces and human activities such as wildfire, overgrazing, cultivation, and weed invasion.

REM 299 (s) Directed Study (1-16 credits)

Credit arranged

REM 341 Systematic Botany (3 credits)

Phylogenetic approach to understanding plant systematics and evolution with a primary focus on the flora of the Pacific Northwest. Includes identification of important plant families and the use of dichotomous keys for species identification. (Spring only)

Prereqs: BIOL 114 or BIOL 115; and BIOL 213 or PLSC 205.**REM 398 Renewable Natural Resources Internship (1-16 credits)**

Credit arranged. Supervised field experience with an appropriate public or private agency. Required for cooperative education students.

REM 400 (s) Seminar (1-16 credits)

Credit arranged

REM 403 (s) Workshop (1-16 credits)

Credit arranged

REM 404 (s) Special Topics (1-16 credits)

Credit arranged

REM 405 (s) Professional Development (1-16 credits)

Credit arranged

REM 410 Principles of Vegetation Monitoring and Measurement (3 credits)

Introduces theory and application of quantitative and qualitative methods for measuring and monitoring vegetation in grasslands, shrublands, woodlands, and forests. Students will gain a solid understanding of how to measure and evaluate vegetation attributes and design and implement monitoring programs relative to wildlife habitat, livestock forage, fire fuel characteristics, watershed function, and many other wildland values. Recommended Preparation: A basic understanding of how to use computer spreadsheets such as Excel. Students are encouraged to also enroll in REM 460 for field experience in collecting vegetation data that will be used in this course. Graduate students should enroll in REM 520 - Advanced Vegetation Measurements and Monitoring. Typically Offered: Fall.

Prereqs: STAT 251

REM 411 Wildland Habitat Ecology and Assessment (2 credits)

Cross-listed with WLF 411

Joint-listed with REM 511, WLF 511

This course integrates theoretical concepts with field sampling related to scientific research, wildlife habitat, and land management practices. Students collect, analyze, and report on ecological data in various formats, and learn specific protocols used by professionals to assess wildlife habitat. Class field trips are required for on-campus students, and alternative field assignments will be required for remote, online students. Additional assignments required for graduate credit. Recommended preparation: REM 252 and REM 253, REM 341, or other plant identification class; introductory statistics course; ability to use excel. Co-enrollment in REM 410 is recommended. Typically Offered: Varies.

REM 429 Landscape Ecology (3 credits)

Ecological relationships and conservation issues for biotic communities across the landscape, including spatial and temporal dynamics and patterns, and importance of landscapes in maintenance of ecosystem diversity and function. One or more field trips; one 2-3 hour lab period per week. Recommended Preparation: Familiarity with spreadsheet programs and problem solving using computer. (Spring only)

Prereqs: FOR 221 or REM 221

REM 440 Restoration Ecology (3 credits)

Cross-listed with NRS 440

The ecological restoration of disturbed ecosystems. Fundamental principles from ecology, ecophysiology, and community ecology are used in a systems ecology approach to examine how the structure and function of damaged ecosystems can be restored – with the goal of establishing a stable and self-sustaining ecosystem.

Prereqs: NR 321, FOR 221, REM 221, WLF 220, BIOL 314, or Permission

REM 451 Rangeland Issues and Management Principles (2 credits)

Advanced discussion of ecological principles and challenges associated with managing rangelands, including sustainable practices to maintain and restore rangelands and the human communities that rely on them. Typically Offered: Fall.

REM 456 Integrated Rangeland Management (3 credits)

General Education: Senior Experience

Management strategies for integrating grazing with other natural resource values such as wildlife, water, timber, recreation, and aesthetics; emphasis on herbivore ecology including ecological impacts of grazing, ways to manage grazing, and nutritional relationships between plants and free-ranging ungulates on rangeland, pastureland, and forest ecosystems. One 4 to 5 day field trip. Recommended Preparation: REM 151. (Spring only)

Prereqs: ENGL 313 or ENGL 317

REM 459 Rangeland Ecology (3 credits)

Application of ecological principles in rangeland management; stressing response and behavior of range ecosystems to various kinds and intensity of disturbance and management practice. Recommended Preparation: courses in general ecology (e. g. , REM 221), technical writing (e. g. , ENGL 317), and vegetation assessment (e. g. , REM 410 or FOR 274) or Permission. Students are encouraged to also enroll in REM 460 for field experience in collecting vegetation data that will be used in this course.

REM 460 Integrated Field Studies in Rangelands (1 credit)

Field experiences in rangeland ecology, vegetation measurements, and habitat assessment. The course consists of preparatory lectures and a four-day field trip to rangelands. The course integrates concepts from Principles of Vegetation Monitoring and Measurement (REM 410), Wildland Habitat Ecology and Assessment (REM 411), and Rangeland Ecology (REM 459). Students should take this course concurrently with or before REM 410, REM 411, and REM 459. Required for REM majors. (Fall only)

Prereqs: Permission

REM 465 Ecophysiology (3 credits)

Functional responses and adaptations of individual species to their environment, emphasizing the physiological mechanisms that influence the interactions between organisms and the major environmental factors (e. g. , solar radiation, energy balance, temperature, water and nutrients, climate), and how this affects the interactions among species and their growth and survival (e. g. , competition, herbivory, and allelopathy). Typically Offered: Fall.

Prereqs: FOR 221/WLF 220.

REM 473 ECB Senior Presentation (1 credit)

General Education: Senior Experience

Cross-listed with FISH 473, FOR 473

, FSP 473, NRS 473, WLF 473. Reporting and presenting the senior project (thesis or internship); taken after or concurrently with REM 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).

Prereqs: Instructor Permission

REM 475 Remote Sensing Application with Unmanned Aerial Systems (UAS) (3 credits)

Cross-listed with ASM 476

This course introduces students to the fundamental components of UAS, sensors and platforms, UAS operational concepts, the principles of UAS data collection, the legal framework for UAS operations, photogrammetric theory, image processing software, and the generation and analysis of orthomosaics and 3D point clouds. The course emphasizes the use of UAS in the context of natural resource science, technology and applications. Typically Offered: Varies.

Prereqs: FOR 375 or equivalent

REM 476 Unmanned Aerial Systems (UAS) Operations (1 credit)

This course covers the material necessary for students to pass the FAA Part 107 Remote Pilot Certificate test needed to legally fly UAS for business, research, or resource management purposes. Additionally, the course reviews state and local laws and University policies for UAS operation and provides opportunities for students to gain operations experience through planning and executing UAS flights.

REM 480 Ecological Restoration (3 credits)

Joint-listed with REM 580

Planning and implementing restoration projects in conjunction with land agencies and stakeholders. Includes service-learning projects. Field trip(s) required. Additional literature review, reports, discussion, and/or a class project are required for graduate credit.

Prereqs: REM 440 or Permission

REM 497 Senior Research and Thesis (1-16 credits)

Credit arranged. A research investigation, selected and designed jointly by the student and professor, during which the student has the opportunity to learn research techniques of experimental design, proposal writing, data collection and analysis, scientific writing, and publication; at completion, the student will produce a publishable journal manuscript and/or a conference presentation.

REM 498 (s) Internship (1-16 credits)

Credit arranged. Supervised field experience where students define specific topics and skills in rangeland management they wish to gain, develop a learning plan, and present a final report of knowledge gained or project outcomes. The internships will be overseen by an on-site field supervisor and a faculty mentor. Instructor Permission required.

REM 499 (s) Directed Study (1-16 credits)

Credit arranged. For the individual student; conferences, library, field, or lab work.

REM 500 Master's Research and Thesis (1-16 credits)

Credit arranged

REM 501 (s) Seminar (1-16 credits)

Credit arranged. Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics.

REM 502 (s) Directed Study (1-16 credits)

Credit arranged

REM 503 (s) Workshop (1-16 credits)

Credit arranged. Selected topics in the conservation and management of natural resources.

REM 504 (s) Special Topics (1-16 credits)

Credit arranged

REM 505 (s) Professional Development (1-16 credits)

Credit arranged

REM 507 Landscape and Habitat Dynamics (3 credits)

Students explore landscape change occurring a variety of spatial and temporal scales, including global change, succession, disturbance events, and change induced by humans. Via scientific readings, models and spatial analysis students will learn how to quantify landscape change and how a change in environmental conditions and disturbance regimes may affect the composition of landscapes, specifically plant and animal habitats. Recommended Preparation: courses in ecology, statistics, and GIS. (Fall, alt/years)

Prereqs: Permission

REM 511 Wildland Habitat Ecology and Assessment (2 credits)

Cross-listed with WLF 511

Joint-listed with REM 411, WLF 411

This course integrates theoretical concepts with field sampling related to scientific research, wildlife habitat, and land management practices. Students collect, analyze, and report on ecological data in various formats, and learn specific protocols used by professionals to assess wildlife habitat. Class field trips are required for on-campus students, and alternative field assignments will be required for remote, online students. Additional assignments required for graduate credit. Recommended preparation: REM 252 and REM 253, REM 341, or other plant identification class; introductory statistics course; ability to use excel. Co-enrollment in REM 410 is recommended. Typically Offered: Varies.

REM 520 Advanced Vegetation Measurement and Monitoring (3 credits)

This course introduces theory and application of quantitative and qualitative methods for measuring and monitoring vegetation in grasslands, shrublands, woodlands, and forests. Students will gain a solid understanding of how to measure and evaluate vegetation attributes and design and implement monitoring programs relative to wildlife habitat, livestock forage, fire fuel characteristics, watershed function, and many other wildland values. Advanced Vegetation Measurements and Monitoring includes a 1-hr weekly discussion of current literature on vegetation measurements and the use of monitoring data for natural resource decision making. Recommended Preparation: A basic understanding of how to use computer spreadsheets such as Excel. Students are encouraged to also enroll in REM 460 for field experience in collecting vegetation data that will be used in this course. (Fall only)

Prereqs: STAT 251 or Permission

REM 529 World Savannas (3 credits)

This course provides a broad overview of world savannas including their characteristics and the ecosystem goods and services they provide. The course focuses on the ecological and biogeochemical characteristics of savannas, how humans use these ecosystems, current problems, and strategies land management are applying to solve them.

REM 570 Presentation Skills for Scientists (2 credits)

A practical course to master the skills required for oral presentations for research, teaching, and outreach. A detailed examination of all elements that must be integrated and mastered for an effective and engaging oral presentation.

REM 580 Ecological Restoration (3 credits)

Joint-listed with REM 480

Planning and implementing restoration projects in conjunction with land agencies and stakeholders. Includes service-learning projects. Field trip(s) required. Additional literature review, reports, discussion and/or a class project are required for graduate credit.

Prereqs: REM 440 or Permission

REM 597 (s) Practicum (1-16 credits)

Credit arranged

REM 598 (s) Internship (1-16 credits)

Credit arranged

REM 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

REM 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Prereqs: Admission to the doctoral program in Natural Resources and Department Permission

Recreation, Sport, and Tourism Management (RSTM)

RSTM 104 Recreation, Sport, and Tourism in Healthy Communities (3 credits)

General Education: Social and Behavioral Ways of Knowing
Gen Ed: Social Science. Introduction to the foundations of recreation, sport and tourism professions, related issues, resources, professional opportunities, and the profession's role in supporting healthy active communities. Typically Offered: Fall.

RSTM 105 Teaching Golf I (2 credits)

Teach Professional Golf Management students the basics of golf instruction. They will learn how to establish relationships, organize groups, design golf development programs, demonstrate the short game, as well as the full swing. (Spring only)

Prereqs: PGA student or Permission

RSTM 106 Introduction to Sport Management (3 credits)

General Education: American Diversity, Humanistic and Artistic Ways of Knowing

Introduction to sport management with an emphasis on historical, humanistic, cultural, and artistic perspectives of sport. How these perspectives are intertwined within the foundations of sport management and the roles that sport plays in the human experience are focal points of discussion. The course also provides an overview of sport management careers as well as current issues and future trends. Typically Offered: Spring.

RSTM 107 Outdoor Recreation and Adventure Sports (3 credits)

Introduction to leadership and motivational theories, core competencies, trends, and programming for contemporary outdoor recreation and adventure sports. Typically Offered: Spring.

RSTM 108 Orienteering & Navigation (1 credit)

This course will provide an introduction to orienteering and basic map and compass navigation skills for working or recreating. The reading and understanding of forest service and topographical maps will be covered with a focus on symbols, legends, border information and contour lines. Magnetic compasses and an introduction to GPS technology will be used to teach course plotting on maps. Orienteering field experience will be integrated throughout the course. Instruction requires practical field application for hands-on experience.

RSTM 200 (s) Seminar (1-16 credits)

Credit arranged

RSTM 203 (s) Workshop (1-16 credits)**RSTM 204 (s) Special Topics (1-16 credits)**

Credit arranged

RSTM 205 Teaching Golf II (2 credits)

Basic fundamentals of how the golf swing works. Students will learn how to analyze swing motion and observe ball flight characteristics to help the student improve their golf game. Students will also examine ways to generate business using marketing and promotional techniques. (Fall only)

Prereqs: PGA student or PGA 103 and Permission

RSTM 216 River Recreation and Water Craft Safety (2 credits)

Introduction to water crafts (river board, rafts, canoes, inflatables, etc) and teaching basic paddling skills and aspects of safety. Additional content includes: river policy, history, culture, careers/guiding, equipment maintenance/storage, river camping and leadership. Field days required (3-5 days).

Prereqs or Coreqs: RSTM 107

RSTM 218 Rock Climbing & Mountaineering (3 credits)

This course will teach: introduction to fundamentals of basic rock climbing including equipment, climbing techniques, knots, belaying, and rappelling; emphasis on skill development, risk management, and leadership. Introduction to fundamentals of mountaineering including equipment; fundamentals; rock, snow, and ice techniques; climbing equipment; navigation; expedition planning and safety; emphasis on skill development and safety. This course will follow and promote industry safety standards and teach best practices. Instruction requires three to five full days of practical field application for hands-on experience.

Prereqs: RSTM 107

RSTM 222 Cross Country Skiing (1 credit)

Intro to skills of cross country skiing including equipment, waxing, climbing techniques, turns, downhill, and diagonal glides. One 1-day field trip. Recommended Preparation: Two courses from NRS 125, NRS 387, NRS 487, NRS 490. (Alt/years)

RSTM 224 Whitewater Rafting (1 credit)

Intro to skills of whitewater rafting including equipment, trip planning, permits, techniques, and river impact. One or two field trips. (Alt/years)

Prereqs: Two courses from NRS 125, NRS 387, NRS 487, NRS 490, or Permission

RSTM 225 Kayaking (1 credit)

Intro to skills of whitewater kayaking including equipment, eskimo rolls, eddy turns, ferrying, and rapid maneuvering. One 2-day field trip. (Alt/years)

Prereqs: Two courses from NRS 125, NRS 387, NRS 487, NRS 490, or Permission

RSTM 227 Mountain Biking (1 credit)

Introduction to fundamentals of mountain biking including equipment, trip planning, skill development, off-road riding, bike repair, and safety. One 3- to 7-day field trip required.

RSTM 228 Avalanche Fundamentals (2 credits)

This course will teach the skills necessary for understanding the complex systems involved in backcountry winter avalanche conditions. This course will follow and promote industry safety standards and teach best practices based off of the guidelines set by the American Avalanche Association. This two credit course will cover curriculum such as: general information about avalanche hazard, a framework for decision making and risk management while traveling in avalanche terrain, effective field observation techniques, companion rescue and proper equipment for traveling in avalanche terrain. Instruction requires two full days of practical field application for hands-on experience.

Prereqs: RSTM 107 or equivalent experience with Instructor Permission

RSTM 229 Swiftwater Rescue Training (2 credits)

This course will teach: identifying river hazards, rescue philosophy/liability, self rescue, tethered swimmers/contact rescues, throwbag deployment, boat based/shore based rescues, strainer swimming, shallow water crossings, foot and body entrapment, knots, boat pins, mechanical advantage and technical rope systems, and quick, smooth, effective rescue technique. Instruction requires three full days of practical field application for hands-on experience.

Prereqs: RSTM 107 and RSTM 216; or equivalent experience with Instructor Permission

RSTM 231 Alpine Skiing (1 credit)

Introduction to skills of alpine skiing including ski instruction and tactics in various terrain, equipment selection, and waxing. One 2-day field trip.

RSTM 254 Camp Leadership in Recreation and Sport (3 credits)

Objectives, organizational structures, programs, and philosophies of for-profit and non-profit recreation and sport camps. One 3-4 day field trip. (Alt/years)

RSTM 280 Practicum in Recreation, Sport, and Tourism (1 credit, max 3)

Practical experience in agency recreation and leisure services recreation, park, sport, or tourism agency services. Forty clock hours required per credit. Graded P/F.

Prereqs: Advisor Permission

RSTM 290 Wilderness First Responder (3 credits)

Wilderness First Responder is the accepted standard in wilderness medical training for guides, trip leaders, and outdoor professionals. This course covers the knowledge and skills needed to respond to back country medical and trauma situations. Overnight field trip required. (Spring only)

RSTM 299 (s) Directed Study (1-16 credits)

Credit arranged

RSTM 305 Teaching Golf III (2 credits)

This course will build on the concepts contained in the Analysis of Swing and the pre-seminar material for Philosophy and Swing Concepts. This course will examine swing philosophy; apply concepts to various situations; understand course management, physical fitness, and special populations; evaluate short game skills; identify and demonstrate different drills; and incorporate video technology.

Prereqs: RSTM 205

RSTM 310 Outdoor and Adventure Leadership (3 credits)

Outdoor and adventure leadership, contemporary issues, and effective planning and implementation for outdoor/adventure experiences. Field trip(s) required. Typically Offered: Fall (Even Years).

RSTM 380 Principles of Travel and Tourism (3 credits)

General Education: International, Social and Behavioral Ways of Knowing Gen Ed: International Tourism is "the largest scale movement of goods, services, and people that humanity has ever seen." This course provides an overview of tourism as an industry and a socio-cultural phenomenon from local to international levels as well as the economic, social, and environmental impacts of tourism on local communities.

RSTM 400 (s) Seminar (1-16 credits)

Credit arranged

RSTM 403 (s) Workshop (1-16 credits)

Credit arranged

RSTM 404 (s) Special Topics (1-16 credits)

Credit arranged

RSTM 405 (s) Professional Development (1-16 credits)

Credit arranged. Credit earned may not be applied toward a graduate degree program. Professional development and enrichment of recreational professionals. Additional projects/assignments required for graduate credit.

RSTM 408 Experiential Education and Adventure Recreation (3 credits)

Philosophical and theoretical foundations of experiential education and adventure activities, and applications to individual, group, and organizational development. Field trips required. (Alt/years)

RSTM 411 Expedition Planning and Management (3 credits)

This course will explore the process of expedition planning including skill, resource and risk assessments, and experience design and activity management to meet desired outcomes. Students will carry out a 7-10 day expedition of their own to test their plan.

Prereqs or Coreqs: RSTM 107

RSTM 415 Turfgrass Management (3 credits)

Turfgrass science, cultivation, and management for a wide variety of golf course applications.

RSTM 424 Inclusive Physical Education and Recreation (3 credits)

Cross-listed with PEP 424

To provide an overview of movement and physical activities in physical education and recreational settings for individuals with disabilities. Emphasis will be on history, etiology, characteristics, services, resources, professional competencies, and instructional strategies. Practical experience (16 hours in the community) is required to enhance instructional abilities to adapt and create an inclusive physical education and recreational setting for all participants.

Prereqs: Senior standing or Permission.

RSTM 425 Programming and Marketing in Movement and Leisure Sciences (3 credits)

Joint-listed with RSTM 525

In this course, students will learn the science and art of programming and marketing with a focus on their applications in the design, implementation, and evaluation of movement and leisure programs. By the end of the course, each student will have the requisite skills to implement a program of their own design. (Fall only)

RSTM 430 Activity and Health in Movement and Leisure Sciences (3 credits)

Cross-listed with PEP 430

Joint-listed with RSTM 530 and PEP 530

This course familiarizes students with contemporary research and professional applications of activity in relation to health and wellness using a variety of perspectives in movement and leisure sciences and related disciplines. (Fall only)

RSTM 455 Design & Analysis of Research in Movement Sciences (3 credits)

This course is designed to survey the basic types of research methods often found in exercise science, health and recreation. A variety of research designs and computerized statistical analyses are studied to help students understand the systematic nature of problem solving. Various research problems as they relate to exercise science and health and recreation are discussed for the purpose of identifying the broad and diverse nature of research in the movement, leisure, and health professions. (Spring only)

Prereqs: Junior or Senior standing.

RSTM 485 Trends and Policies in Recreation, Sport and Tourism (3 credits)

Joint-listed with RSTM 585

Current trends and policy issues in the recreation, sport and tourism field; analysis of selected topics of current relevance. (Spring only)

RSTM 490 Experience and Event Management (3 credits)

Joint-listed with RSTM 590

This class focuses on the development and management of special events and experiences in recreation, sport and tourism. (Spring only)

RSTM 498 (s) Internship in Recreation, Sport, and Tourism (1-16 credits)

General Education: Senior Experience

Credit arranged. Supervised field work with a professional, sport, or tourism recreation agency.

RSTM 499 (s) Directed Study (1-16 credits)

Credit arranged

RSTM 500 (s) Master's Research and Thesis (1-16 credits)

Credit arranged

RSTM 502 (s) Directed Study (1-16 credits)

Credit arranged

RSTM 503 (s) Workshop (1-16 credits)

Credit arranged

RSTM 504 (s) Special Topics (1-16 credits)

Credit arranged

RSTM 505 (s) Professional Development (1-16 credits)

Joint-listed with RSTM 405

Credit arranged. Credit earned may not be applied toward graduate degree program. Professional development and enrichment of recreational professionals. Additional projects/assignments required for graduate credit.

RSTM 525 Programming and Marketing in Movement and Leisure Sciences (3 credits)

Joint-listed with RSTM 425

In this course, students will learn the science and art of programming and marketing with a focus on their applications in the design, implementation, and evaluation of movement and leisure programs. By the end of the course, each student will have the requisite skills to implement a program of their own design. (Fall only)

RSTM 530 Activity and Health in Movement and Leisure Sciences (3 credits)

Cross-listed with PEP 530

Joint-listed with RSTM 430 and PEP 430

This course familiarizes students with contemporary research and professional applications of activity in relation to health and wellness using a variety of perspectives in movement and leisure sciences and related disciplines. (Fall only)

RSTM 585 Trends and Policies in Recreation, Sport and Tourism (3 credits)

Joint-listed with RSTM 485

Current trends and policy issues in the recreation, sport and tourism field; analysis of selected topics of current relevance. (Spring only)

RSTM 590 Experience and Event Management (3 credits)

Joint-listed with RSTM 490

This class focuses on the development and management of special events and experiences in recreation, sport, and tourism. (Spring only)

RSTM 595 Budgeting, Financing and Managing Recreational Facilities (3 credits)

Policies and practices involved in budgeting, financing, acquisition, and managing recreation agencies and facilities. (Spring only)

RSTM 598 (s) Internship (1-16 credits)

Credit arranged. Supervised field experience in an appropriate leisure agency.

RSTM 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Religious Studies (RELS)

RELS 204 (s) Special Topics (1-16 credits)

Credit arranged

RELS 299 (s) Directed Study (1-16 credits)

Credit arranged

RELS 302 Biblical Judaism: Texts and Thought (3 credits)

Cross-listed with PHIL 302

Analysis of the Hebrew Bible (Old Testament) and related texts with an emphasis on hermeneutics and thought.

RELS 303 Early Christianity: Texts and Thought (3 credits)

Cross-listed with PHIL 303

Analysis of the New Testament and other early Christian texts of the first and second centuries CE with an emphasis on hermeneutics and thought.

RELS 307 Buddhism (3 credits)

Cross-listed with PHIL 307

Philosophy and religion of Gautama Buddha as it developed in India, Tibet, China, and Japan.

RELS 327 Belief Systems (3 credits)

Cross-listed with ANTH 327

Method and theory of comparative anthropological study of religion.

RELS 344 The Roman Empire (3 credits)

Cross-listed with HIST 344

Surveys Roman history from c. 31 BCE to the 5th century CE, paying particular attention to military, political, religious, and social issues and developments.

RELS 404 (s) Special Topics (1-16 credits)

Credit arranged

RELS 422 Contemporary Pacific Northwest Indians (3 credits)

General Education: American Diversity

Cross-listed with AIST 422, ANTH 422

Joint-listed with ANTH 522

This course is intended to impart an understanding of the vitality and rich diversity of contemporary Pacific Northwest American Indian societies, their histories, and their literatures, e. g. , in the arts and expressive culture, in governmental affairs both indigenous and external, in economics, ecological relations and natural resources, in health care, and in family, social and religious life, in oral traditions, in world views and cultural values. This understanding is inclusive of both indigenous cultural, as well as contact-historical, expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome. ANTH 422 is cooperative: open to WSU degree-seeking students. Cooperative: open to WSU degree-seeking students.

RELS 441 Ancient Greece: From Bronze Age to Alexander (3 credits)

Cross-listed with HIST 444

Joint-listed with HIST 554

Survey of development of Greek civilization, BC 2000-BC 300. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

Prereqs: None**Coreqs:** None Prereqs or Coreqs: None**RELS 442 The Medieval Church: Europe in the Early and High Middle Ages (3 credits)**

General Education: Humanistic and Artistic Ways of Knowing

Cross-listed with HIST 442

Joint-listed with HIST 542

Evolution of medieval Christian society from reign of Constantine (c. 300) to pontificate of Innocent III (1215), as expressed in monastic and mendicant orders, crusades, 12th-century Renaissance, and heresy. Typically Offered: Varies.

RELS 443 The Medieval State: Europe in the High and Late Middle Ages (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Cross-listed with HIST 443

Joint-listed with HIST 543

Analysis of how the vitality of particular medieval princes, of the commercial revolution, and of such movements as development of common law was harnessed in the evolution of medieval government from feudalism to the modern state.

RELS 444 Ancient Rome: The Republic (3 credits)

Cross-listed with HIST 446

Joint-listed with HIST 546

Survey of development of Roman civilization, 800-27 BCE. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

RELS 447 The Renaissance (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Cross-listed with HIST 447

Explores the transformative movement known as the European Renaissance. Examines how humanism not only shaped and formed art, music, literature and philosophy but also informed one's relationship to the state.

RELS 448 The Reformation (3 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Cross-listed with HIST 448

This course examines the social and economic as well as the theological dynamic of the Reformation. The course begins by examining the thought of Erasmus and More, continuing through that of Luther, Calvin, and Loyola, to the Anabaptists. Religious upheaval lead not only to the political and military upheaval of the Religious Wars, but also to religious debate, the echoes of which resound through to the present. Additional projects/assignments required for graduate credit.

RELS 450 (s) Topics in Ancient History (3 credits, max 9)

Cross-listed with HIST 450

Joint-listed with HIST 550

Examines varied thematic and geographical/chronological topics in ancient history. This course varies in its topical focus each semester. Topics may include but are not limited to: Egypt and the Ancient Near East; religions in the ancient world; the ancient world in modern film or literature; imperialism and colonialism; gender and sexuality; race and ethnicity; trade, commerce, and coins. Typically Offered: Varies.

RELS 499 (s) Directed Study (1-16 credits)

Credit arranged

Sociology (SOC)

SOC 101 Introduction to Sociology (3 credits)

General Education: Social and Behavioral Ways of Knowing
Basic theories, concepts, and processes involved in scientific study of society; includes socialization process, social inequality, the family, religion, deviance, population, the environment, and social change. Typically Offered: Every semester.

SOC 200 (s) Seminar (1-16 credits)

Credit arranged

SOC 201 Introduction to Inequity and Justice (3 credits)

General Education: American Diversity

An interdisciplinary and historical study of social inequities and inclusion in a cross-cultural global context. The course examines multiple forms of diversity and stratification including, but not limited to, culture, class, race/ethnic, gender/sexuality, religious diversity, and political ideology in an effort to raise students' ability to interact with and understand others in our increasingly multicultural world. Courses may vary in their emphasis on United States' or international experiences. May include service learning. Typically Offered: Fall, Spring and Varies.

Prereqs: SOC 101

SOC 203 (s) Workshop (1-16 credits)

Credit arranged

SOC 204 (s) Special Topics (1-16 credits)

Credit arranged

SOC 211 Development of Social Theory (3 credits)

Development of social theory from classical roots through contemporary schools; biographical accounts and original works in sociological theory.

Prereqs: SOC 101

SOC 230 Social Problems (3 credits)

General Education: Social and Behavioral Ways of Knowing
Contemporary social issues and personal deviations; crime and delinquency, poverty and wealth, drugs, sexual variations, racism, sexism, and the environment.

SOC 299 (s) Directed Study (1-16 credits)

Credit arranged

SOC 309 Social Science Research Methods (3 credits)

This course introduces students to quantitative and qualitative research methods employed in the social sciences. It will discuss research design and ethics, data collection processes, and data analysis. Typically Offered: Fall and Spring.

Prereqs: STAT 153 or STAT 251; Junior or Senior Standing; SOC, ANTH, CRIM majors or SOC minors only

SOC 327 Sociology of the Family (3 credits)

This class is designed to help students critically evaluate and understand the ways they think about families and the role of the families. In this course we will examine families as social institutions that vary across time and culture, the ways that families shape and are constrained by structural conditions, and the interactions between the family and other social institutions.

Prereqs: SOC 101

SOC 340 Environmental Sociology and Globalization (3 credits)

This course introduces students to sociological understanding of environment and globalization, demonstrating the importance of connecting questions of environmental concern to global processes. Area emphasis within the study of environmental sociology and globalization will vary depending on instructor.

SOC 341 Science, Technology, and Society (3 credits)

This course situates science and technology in the social context. The course draws from Sociology of Science and Science and Technology Studies to examine the nature of scientific expertise, processes of knowledge creation, interrelationship between science and technology, impacts of science and technology on society, and science policy. Students will develop the ability to ask important questions about how the human world affects science and technology, and how science and technology affects the human world.

SOC 343 Power, Politics, and Society (3 credits)

Examines the relationship between political and social institutions, the distribution of power and authority in society, the origins and expansion of the modern state, social and cultural basis of political behavior, and characteristics of transnational and global governance. Recommended Preparation: SOC 230.

Prereqs: SOC 101 or Instructor Permission

SOC 344 Understanding Communities (3 credits)

Examines the growth of communities, including cities and small towns; community inequalities, politics, and social movements; built environment, ecology, and sustainability of cities and identity; global cities and immigration. Explores what it takes to practice community citizenship development, and how sociologists may enhance and build community in ways that promote fair and just distribution of resources and equitable living conditions. Typically Offered: Fall.

Prereqs: SOC 101 or Instructor Permission.

SOC 345 Extremism and American Society (3 credits)

This course explores sociological perspectives on extremism in American society. We will consider the socio-structural factors that contribute to a rise in extremist activism, that motivate people to join these organizations, and that provide political opportunity for organizational growth. The class will also explore the historical and contemporary circulation of extremist discourse and ideology in more mainstream spaces. Finally, the course will examine the impact these organizations have on broader society: culture, ideology, political discourse, etc. To accomplish this, the course will focus on case studies of past and current reactionary groups, including hate groups (KKK, neo-Nazi), militia and patriot groups (Posse Comitatus), terrorist groups, and other examples of extremism.

Prereqs: SOC 101 or Instructor Permission

SOC 346 Responding to Risk (3 credits)

This course uses risk as a paradigm for a sociological analysis of agency and structure. Students are introduced to various theories and frameworks for modeling risk. The course investigates risk in individual and group behavior, decision making in situations of risk, and risk in the workings of social institutions and social practices, within the areas of crime and deviance, science and technology, health, and the environment.

Prereqs: SOC 101 or Instructor Permission

SOC 350 Food, Culture, and Society (3 credits)

General Education: American Diversity, Social and Behavioral Ways of Knowing

Cross-listed with ANTH 350

Examines the structural and cultural implications of eating and producing food in a global world. Utilizing a social scientific framework, it explores the history of particular foods and examines how food systems are racialized, classed and gendered. Primary foci include the social history of food holidays and taboos, the relationships between food and identity, the impact of agricultural production practices on food systems and food security, and forms of resistance to these impacts. Recommended Preparation: a 200-level sociology course. May include field trips. Typically Offered: Spring (Even Years).

Prereqs: SOC 101

SOC 351 Animals in Society (3 credits)

This course examines the relationships between human and more-than-human animal species in society to explore interactions, interdependence, meaning making, and policies over time and place. Typically Offered: Varies.

SOC 372 Love and Liberation (3 credits)

The word "love" is considered important yet stubbornly difficult to experience in contemporary society. But what exactly does love mean? We examine the sociology of love, emotion, and social reproduction to review the various meanings of love that have evolved in different societies over time and across the world. As we investigate the social and global history of love, we will also consider the possibility that love is a radical political and economic principle. In fact, perhaps love has been the fundamental goal that gives life to liberation movements and revolutions. Typically Offered: Spring (Even Years).

SOC 400 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: SOC 101

SOC 403 (s) Workshop (1-16 credits)

Credit arranged

Prereqs: SOC 101

SOC 404 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: SOC 101

SOC 416 Qualitative Social Science Methods (3 credits)

Cross-listed with ANTH 416

Joint-listed with ANTH 516

This course introduces students to social science research methods that collect qualitative data. It will discuss research design and ethics, data collection processes, and data analysis. Additional work required for graduate credit. Typically Offered: Varies.

Prereqs: SOC 101 or ANTH 100

SOC 417 Social Data Analysis (3 credits)

Cross-listed with ANTH 417

Joint-listed with ANTH 517

This course introduces students to social science research methods that collect quantitative data. It will discuss research design and ethics, data collection processes, and data analysis.

Prereqs: SOC 101; and STAT 153 or STAT 251

SOC 420 Sociology of Law (3 credits)

The course examines law creation and law enforcement in their social, political, and economic context. Discussions include the major theories of the role of law and functioning of the modern state, and through the use of historical and contemporary case studies students will evaluate the strengths and weaknesses of these theoretical perspectives.

SOC 423 Economic (In)Justice in the United States (3 credits)

This course investigates how United States' institutions create and maintain conditions of economic inequality and injustice. Various angles of inquiry include the unequal distribution of wealth amongst different social groups, the rising power of financial institutions, the prevalence of housing insecurity, the causes and consequences of consumer indebtedness and bankruptcy, and unequal community development.

Prereqs: SOC 101 or Instructor Permission

SOC 424 Sociology of Gender (3 credits)

Historical and comparative analysis of the various roles, statuses, and life opportunities of men and women; emphasis on how gender roles develop in society and their effect on social structure, social institutions, and interpersonal interaction.

SOC 427 Racial and Ethnic Relations (3 credits)

Examination of the social construction of racial categories and meanings; theories of race relations; historical and contemporary experiences of racial/ethnic groups in the U. S. ; contemporary issues and debates.

Prereqs: SOC 101 and SOC 201

SOC 444 Health, Illness, and Society (3 credits)

Cross-listed with ANTH 444

Joint-listed with ANTH 544

This course examines the various cultural events, biological processes, and socio-structural forces that contribute to health and disease of modern populations. Taking a holistic perspective, the course examines how communicable and genetic pathological conditions originate, how they have been handled throughout history and the lengths to which science, medicine, and other social institutions go to keep us healthy.

The course also investigates how we perceive health and explores how various issues, such as genetics, social inequality, culture, and ideology influence how we promote well-being and care for the sick. Additional projects/assignments required for graduate credit. Typically Offered: Spring.

SOC 460 Capstone: Sociology in Action (3 credits)

General Education: Senior Experience

Sociology in Action is designed to provide the resources and guidance necessary for sociology seniors to complete an independent or collaborative research project.

Prereqs: SOC 101 and Senior standing and major in Department of Sociology and Anthropology; or Permission

SOC 462 Senior Practicum (3 credits)

General Education: Senior Experience

This course will involve an applied, on-site experience with an organization or group. The applied experience will be the basis for a thesis that will analyze the applied experience by incorporating theory, methods and knowledge gained from previously-taken sociology classes. In addition, the practicum will include class meetings covering topics related to the applied experience and career paths for majors in Sociology. Typically Offered: Varies.

Prereqs: SOC 101

SOC 465 Environmental Justice (3 credits)

This course surveys the history of environmental justice in the United States and globally, and it explores the different sociological perspectives surrounding environmental justice cases and movements. Courses will slightly differ in emphasis depending on the instructor, allowing opportunities to explore more deeply the social philosophies and policies that inform this course topic. Typically Offered: Spring (Odd Years).

SOC 466 Climate Change and Society (3 credits)

This course introduces students to social, economic, political, and cultural dimensions of climate change. It considers the global nature of climate change, its causes and effects, and key issues related to climate change communication, adaptation, and mitigation. Upon completion of the course, students will be able to identify several key sociological issues related to climate change (e. g. , human impact on climate change, institutional and political responses, public opinions and skepticism, impact on marginalized communities, challenges to communication, role of emotions in climate change, potential avenues for mitigating negative effects).

Prereqs: SOC 101

SOC 498 (s) Internship (1-6 credits, max arranged)

Supervised professional field experience in human service organizations. Graded P/F.

Prereqs: SOC 101, major in Department of Sociology and Anthropology, and Permission

SOC 499 (s) Directed Study (1-16 credits, max arranged)

Credit arranged. Intended to accommodate a wide variety of sociological topics.

Prereqs: SOC 101 and Permission

SOC 501 (s) Seminar (1-16 credits, max arranged)

Credit arranged. Subjects normally offered: sociological research, social problems, and social theory.

Prereqs: Permission

SOC 502 (s) Directed Study (1-16 credits, max arranged)

Credit arranged. Subjects normally offered: sociological theory, human ecology, and race relations.

Prereqs: Permission

SOC 504 (s) Special Topics (1-16 credits)

Credit arranged

SOC 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

Soils (SOIL)

SOIL 120 Introduction to Water Science and Management (2 credits)

This course is an introduction to water science and management. The first part of the course will provide a basic scientific background for understanding water movement, occurrence, and behavior related to the nature of the water molecule that leads to its extraordinary but critical properties. The second part of the course will explore relationships between water, soils, plants, and the atmosphere. The third part of the course will introduce economic, legal, political, institutional, and engineering perspectives of water through a series of case-studies that simultaneously explore critical water issues and the wickedness of water management that is trying to address these needs. This course is designed to gradually transition from frontal lectures to discussions during the semester. Typically Offered: Fall.

SOIL 205 The Soil Ecosystem (3 credits)

General Education: Natural/Integrated Science

Introduction to the physical, chemical, and biological nature of soils.

Prereqs: CHEM 101 or CHEM 111 or Instructor Permission

SOIL 206 The Soil Ecosystem Lab (1 credit)

General Education: Natural/Integrated Science

Lab study relevant to SOIL 205. Experiments and demonstrations on basic and applied aspects of soil science. One 3-hour lab per week.

Coreqs: SOIL 205

SOIL 210 Introduction to Food Systems (3 credits)

Introduction to food systems including the historical development of our current global food system. Linkages among the production, marketing and transportation of food and food policy on human health will be explored. Students will complete a semester-long assessment of the local food system and its impacts on individual, school and community health and strategies to improve the food system. Typically Offered: Fall (Odd Years)

SOIL 299 (s) Directed Study (1-16 credits)

Credit arranged

SOIL 398 (s) Internship (1-6 credits, max 6)

Graded P/F.

Prereqs: Department Permission

SOIL 400 (s) Seminar (1-16 credits)

Credit arranged

SOIL 404 (s) Special Topics (1-16 credits)

Credit arranged

SOIL 409 Principles of Environmental Toxicology (3 credits)

Joint-listed with ENVS 509, FS 509

, SOIL 509. Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Graduate students are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251. Typically Offered: Varies.

SOIL 415 Soil and Environmental Physics (3 credits)

Joint-listed with SOIL 515

Physical properties of soils and their relationships to moisture, aeration, and temperature; plant-soil-atmospheric relationships; solute transport and soil salinity. Two lectures and one 3-hour lab per week. Recommended Preparation: SOIL 205, SOIL 206, and PHYS 111. SOIL 415 is a cooperative course available to WSU degree-seeking students. (Fall, alt/years)

SOIL 417 Market Garden Practicum (1-6 credits)

Experiential learning based course that covers all aspects of running a small acreage vegetable farm. Topics include farm planning, crop rotation, soil fertility and testing, weed management, and food systems. Students satisfy credit hours through participation in lecture/discussion, field work, and field trips. Class meets at the Plant Science Farm. Recommended preparation: SOIL 205.

SOIL 420 Soil and Plant Water Relations (3 credits)

Joint-listed with SOIL 520

The water use efficiency of plants is terrible. This course explores the journey of a water molecule from the atmosphere as it enters the soil, the root, travels through the vascular system and back into the atmosphere from a stomate. Fundamental principles of energy, flow and distribution are explored integrating soil physics and hydrology, plant physiology, and atmospheric sciences to understand the why and how plants utilize water. This course does not explore molecular biology but focuses on fundamentals as well as recent developments in rhizosphere sciences, precision and alternative agriculture, and the global climate. An additional project is required for graduate credit. Typically Offered: Spring.

SOIL 422 Environmental Soil Chemistry (3 credits)

Joint-listed with SOIL 521

Chemical processes in soil environment. Additional work required for graduate credit. Recommended Preparation: SOIL 205, SOIL 206, and CHEM 112. For 521 enrollment, students should have completed one or more chemistry-related courses, including physical chemistry, inorganic chemistry, organic chemistry, mineralogy, biochemistry, analytical chemistry, second semester general chemistry, or geochemistry. Typically Offered: Spring (Even Years). Cooperative: open to WSU degree-seeking students.

SOIL 425 Microbial Ecology (3 credits)

Joint-listed with SOIL 525

Biogeochemical activities and relationships of microorganisms in soil, water, plants, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: MATH 143. (Spring alt/years)

Prereqs: EPPN 154 or BIOL 250

SOIL 427 Sustainable Food Systems (3 credits)

General Education: Senior Experience

Joint-listed with SOIL 527

The purpose of this course is to help students apply systems thinking and systems methodological problem solving skills to identify and describe current and future food system issues. Through lectures, case studies, and research, students will explore elements and behavior of food systems that impart sustainability. Additional readings, research, and presentations required for graduate credit.

Prereqs: FOR 221, REM 221, or SOIL 210; or Instructor Permission

SOIL 434 Landscape Nutrient Management (3 credits)

Joint-listed with SOIL 534

Fundamentals of elemental cycles in managed and natural terrestrial systems. The basis underlying nutrient and soil fertility recommendations is explored. Impacts of climate, lithology, and plant-soil feedbacks are discussed. Management at field to watershed scale is addressed. Extra oral and/or written assignments required for graduate credit.

Prereqs: SOIL 205 and SOIL 206

SOIL 436 Principles of Sustainability (3 credits)

Joint-listed with FS 536, SOIL 536

Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Typically Offered: Fall and Spring.

Prereqs: Junior standing or higher

SOIL 438 Pesticides in the Environment (3 credits)

General Education: Senior Experience

Cross-listed with ENT 438, PLSC 438

Principles of pesticide fate in soil, water, and air; pesticide metabolism in plants, pesticide toxicology, and pesticide mode-mechanism of action; pest resistance to pesticides; biotechnology in pest control; regulations and liability; equipment application technology; pesticide transport, storage, and disposal; and social and ethical considerations. Recommended Preparation: CHEM 275.

SOIL 444 Water Quality in the Pacific Northwest (3 credits)

Cross-listed with ENVS 444

Joint-listed with ENVS 544 and SOIL 544

Qualitative aspects of water are covered in this class. Major topics are qualitative aspects of (1) surface water, (2) groundwater, (3) drinking water, (4) water in the oceans, and (5) the human waste stream. Concepts presented are relevant to world-wide water quality issues and concepts; however, however, an emphasis is placed on issues within the four Pacific Northwest states (ID, AK, OR, WA).

SOIL 446 (s) Soil Fertility (1-3 credits, max 3)

Principles of soil fertility management; availability of plant nutrients and their relationship to plant growth and fertilization practices.

Recommended Preparation: SOIL 205 and 206.

SOIL 448 Drinking Water and Human Health (3 credits)

Cross-listed with ENVS 448

Joint-listed with ENVS 548 and SOIL 548

Understand the characterization, testing, and treatment of chemical, microbial, and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects, and protection of municipal, community, and private well systems. (Spring)

SOIL 450 Environmental Hydrology (3 credits)

Cross-listed with ENVS 450

Comprehensive understanding of the hydrologic processes associated with the environmental processes. Includes components of the hydrologic cycle, analysis of precipitation and run off, evapotranspiration, routing, peak flow, infiltration, soil and water relationships, snowmelt, and frequency analysis. Typically Offered: Spring.

Prereqs: MATH 143 or vertically related higher course

SOIL 452 Environmental Water Quality (3 credits)

Joint-listed with SOIL 552

Students are exposed to techniques, approaches and strategies to monitor and assess non-point pollution and its effects on beneficial uses in downstream water bodies. The class covers field lab, and modeling approaches as applied to mixed forest, urban and agricultural watersheds. Students will learn approaches commonly used in TMDL assessment and the development of best management practices in implementation planning. Additional work required for graduate credit.

Two lectures and one 3-hour lab a week. Recommended preparation:

SOIL 205 and BIOL 250. Typically Offered: Varies.

Prereqs: CHEM 111 and CHEM 111L; SOIL 450 or ENVS 450 or FOR 462 or CE 325 or BE 355

SOIL 454 Pedology (3 credits)

Morphology, genesis, and classification of soils; distribution of soils as related to environmental processes and factors. Two lectures and one 4-hour lab per week. Recommended Preparation: SOIL 205 and SOIL 206. Cooperative: open to WSU degree-seeking students.

SOIL 456 North Idaho Field Trip (1 credit)

Joint-listed with SOIL 556

Soils and land use in northern Idaho ecosystems; emphasis on soil parent materials, soil formation and morphology, and soil-plant community relationships. Graded P/F. One 3-day field trip; additional class meetings and assignments before and after field trip. Cooperative: open to WSU degree-seeking students. Typically Offered: Fall.

Prereqs: SOIL 205 or Permission

SOIL 458 Soil and Site Evaluation (2 credits)

Description and evaluation of soils; emphasis on morphological features and properties that influence land use. Graded P/F. Two to four hours of lab per week (may include local field trips); one 3-day or one 6-day field trip. Recommended preparation: SOIL 205. Cooperative: open to WSU degree-seeking students.

SOIL 464 Food Toxicology (3 credits)

Cross-listed with FS 464

Joint-listed with FS 564, SOIL 564

General principles of toxicologic evaluation of chemicals, which intentionally or unintentionally enter the food chain. Toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Additional projects/assignments required for graduate credit. Typically Offered: Fall.

Prereqs: BIOL 300 or BIOL 380 Cooperative: open to WSU degree-seeking students.

SOIL 499 (s) Directed Study (1-16 credits)

Credit arranged

SOIL 500 Master's Research and Thesis (1-16 credits)

Credit arranged

SOIL 501 (s) Seminar (1-16 credits)

Credit arranged

SOIL 502 (s) Directed Study (1-16 credits)

Credit arranged

SOIL 504 (s) Special Topics (1-16 credits)

Credit arranged

SOIL 509 Principles of Environmental Toxicology (3 credits)

Cross-listed with ENVS 509, FS 509

Joint-listed with SOIL 409

Fundamental toxicological concepts including dose-response relationships, absorption of toxicants, distribution and storage of toxicants, biotransformation and elimination of toxicants, target organ toxicity and teratogenesis, mutagenesis, and carcinogenesis; chemodynamics of environmental contaminants including transport, fate, and receptors; chemicals of environmental interest and how they are tested and regulated; risk assessment fundamentals. Graduate students are required to prepare an additional in-depth report. Recommended Preparation: BIOL 102 or BIOL 115, CHEM 111, CHEM 112, CHEM 275, and STAT 251. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

SOIL 515 Soil and Environmental Physics (3 credits)

Joint-listed with SOIL 415

Physical properties of soils and their relationships to moisture, aeration, and temperature; plant-soil-atmospheric relationships; solute transport and soil salinity. Two lectures and one 3-hour lab per week.

Recommended Preparation: SOIL 205, SOIL 206, and PHYS 111. (Fall, alt/years)

SOIL 520 Soil and Plant Water Relations (3 credits)

Joint-listed with SOIL 420

The water use efficiency of plants is terrible. This course explores the journey of a water molecule from the atmosphere as it enters the soil, the root, travels through the vascular system and back into the atmosphere from a stomate. Fundamental principles of energy, flow and distribution are explored integrating soil physics and hydrology, plant physiology, and atmospheric sciences to understand the why and how plants utilize water. This course does not explore molecular biology but focuses on fundamentals as well as recent developments in rhizosphere sciences, precision and alternative agriculture, and the global climate. An additional project is required for graduate credit. Typically Offered: Spring.

SOIL 521 Environmental Soil Chemistry (3 credits)

Joint-listed with SOIL 422

Chemical processes in soil environment. Additional work required for graduate credit. Recommended Preparation: SOIL 205, SOIL 206, and CHEM 112. For 521 enrollment, students should have completed one or more chemistry-related courses, including physical chemistry, inorganic chemistry, organic chemistry, mineralogy, biochemistry, analytical chemistry, second semester general chemistry, or geochemistry. Typically Offered: Spring (Even Years). Cooperative: open to WSU degree-seeking students.

SOIL 525 Microbial Ecology (3 credits)

Joint-listed with SOIL 425

Biogeochemical activities and relationships of microorganisms in soil, water, plants, and animals. Extra oral and/or written assignments required for graduate credit. Recommended Preparation: MATH 143. (Spring alt/years).

Prereqs: EPPN 154 or BIOL 250

SOIL 527 Sustainable Food Systems (3 credits)

General Education: Senior Experience

Joint-listed with SOIL 427

The purpose of this course is to help students apply systems thinking and systems methodological problem solving skills to identify and describe current and future food system issues. Through lectures, case studies, and research, students will explore elements and behavior of food systems that impart sustainability. Additional readings, research, and presentations required for graduate credit.

SOIL 534 Landscape Nutrient Management (3 credits)

Joint-listed with SOIL 434

Fundamentals of elemental cycles in managed and natural terrestrial systems. The basis underlying nutrient and soil fertility recommendations is explored. Impacts of climate, lithology, and plant-soil feedbacks are discussed. Management at field to watershed scale is addressed. Extra oral and/or written assignments required for graduate credit.

Prereqs: SOIL 205 and SOIL 206

SOIL 536 Principles of Sustainability (3 credits)

Cross-listed with FS 536

Joint-listed with FS 436, SOIL 436

Presented as online doculectures, covering topics such as: Origins of Sustainability, Standards of Sustainability, Culture of Waste, Built Environment, Industrial Sustainability, Energy Sustainability, Water Resources, Measuring Sustainability, Sustainable Impact Assessment, and Our Sustainable Future. Readings and homework are assigned with each topic. Learning assessment will be from homework, exams and written papers. Additional work is required for graduate credit. Typically Offered: Fall and Spring. Cooperative: open to WSU degree-seeking students.

SOIL 544 Water Quality in the Pacific Northwest (3 credits)

Cross-listed with ENVS 544

Joint-listed with ENVS 444, SOIL 444

Qualitative aspects of water are covered in this class. Major topics are qualitative aspects of (1) surface water, (2) groundwater, (3) drinking water, (4) water in the oceans, and (5) the human waste stream. Concepts presented are relevant to world-wide water quality issues and concepts; however, an emphasis is placed on issues within the four Pacific Northwest states (ID, AK, OR, WA). Typically Offered: Fall.

SOIL 548 Drinking Water and Human Health (3 credits)

Cross-listed with ENVS 548

Joint-listed with ENVS 448 and SOIL 448

Understand the characterization, testing, and treatment of chemical, microbial, and hazardous compounds and their impact on human health. Be familiar with drinking water standards, regulatory aspects, and protection of municipal, community, and private well systems. (Spring)

SOIL 552 Environmental Water Quality (3 credits)

Joint-listed with SOIL 452

Students are exposed to techniques, approaches and strategies to monitor and assess non-point pollution and its effects on beneficial uses in downstream water bodies. The class covers field lab, and modeling approaches as applied to mixed forest, urban and agricultural watersheds. Students will learn approaches commonly used in TMDL assessment and the development of best management practices in implementation planning. Additional work required for graduate credit. Two lectures and one 3-hour lab a week. Recommended preparation: SOIL 205 and BIOL 250. Typically Offered: Varies.

Prereqs: CHEM 111 and CHEM 111L; SOIL 450 or ENVS 450 or FOR 462 or CE 325 or BE 355

SOIL 556 North Idaho Field Trip (1 credit)

Joint-listed with SOIL 456

Soils and land use in northern Idaho ecosystems; emphasis on soil parent materials, soil formation and morphology, and soil-plant community relationships. Graded P/F. One 3-day field trip; additional class meetings and assignments before and after field trip. Cooperative: open to WSU degree-seeking students.

Prereqs: SOIL 205 or Permission

SOIL 564 Food Toxicology (3 credits)

Cross-listed with FS 564

Joint-listed with FS 464, SOIL 464

General principles of toxicologic evaluation of chemicals, which intentionally or unintentionally enter the food chain. Toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Additional projects/assignments required for graduate credit. Typically Offered: Fall. Cooperative: open to WSU degree-seeking students.

SOIL 598 (s) Internship (1-16 credits, max arranged)

Credit arranged. Graded Pass/Fail.

Prereqs: Permission

SOIL 599 (s) Research (1-16 credits, max arranged)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

SOIL 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Spanish (SPAN)

Vertically-related courses in this subject field are: SPAN 101 - SPAN 102 - SPAN 201 - SPAN 202. Any 300-level SPAN course may be considered the terminal course for the related vertical sequence above. A maximum of 16 credits may be earned for vertical credit in any language in the School of Global Studies.

SPAN 101 Elementary Spanish I (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Credit not given for SPAN 101 after SPAN 104 with the exception of vertical credit (see Regulation I-2-d). Pronunciation, vocabulary, reading, spoken Spanish, and functional grammar. Students identified by the instructor as having some degree of Spanish proficiency must take the placement exam. Students with Spanish experience who place higher than SPAN 101 on the placement exam may not enroll in SPAN 101 but may earn credit for SPAN 101 by successfully completing a higher vertically related course. Typically Offered: Fall and Spring.

Prereqs: None

SPAN 102 Elementary Spanish II (4 credits)

General Education: Humanistic and Artistic Ways of Knowing, International

Credit not given for SPAN 102 after SPAN 104. Pronunciation, vocabulary, reading, spoken Spanish, and functional grammar. Typically Offered: Fall and Spring.

Prereqs: SPAN 101 or placement exam

SPAN 105 Beginning Spanish Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the beginning Spanish level. Graded P/F.

SPAN 200 (s) Seminar (1-16 credits)

Credit arranged

SPAN 201 Intermediate Spanish I (4 credits)

General Education: International
Reading, grammar review, speaking, and writing. Typically Offered: Fall and Spring.

Prereqs: SPAN 102, SPAN 104 or placement exam

SPAN 202 Intermediate Spanish II (4 credits)

General Education: International
Reading, grammar review, speaking, and writing. Typically Offered: Fall and Spring.

Prereqs: SPAN 201 or placement exam

SPAN 204 (s) Special Topics (1-16 credits)

Credit arranged

SPAN 205 Intermediate Spanish Conversation Lab (1 credit, max 2)

Practice in listening comprehension and conversational skills at the intermediate Spanish level. Graded P/F.

SPAN 299 (s) Directed Study (1-16 credits)

Credit arranged

SPAN 301 Advanced Grammar (3 credits)

General Education: International
Recommended for prospective teachers of Spanish. Typically Offered: Varies.

Prereqs: SPAN 202 or placement exam Cooperative: open to WSU degree-seeking students.

SPAN 302 Advanced Composition (3 credits)

General Education: International
Recommended for prospective teachers of Spanish. Typically Offered: Fall and Spring.

Prereqs: SPAN 301 or Permission

SPAN 303 Spanish Conversation (3 credits)

General Education: International
Further development of speaking skills for advanced students; discussion on topics of current cultural interest. Typically Offered: Fall and Spring.

Prereqs: SPAN 302 or Permission

SPAN 305 Culture and Institutions of Spain (3 credits)

General Education: International
Typically Offered: Varies.

Prereqs: SPAN 302 or Permission

SPAN 306 Culture and Institutions of Latin America (3 credits)

General Education: International
Cross-listed with LAS 306
General Education: International. Typically Offered: Varies.

Prereqs: SPAN 302 or Permission

SPAN 308 Proficiency in Reading (3 credits)

General Education: International
Issues and methods of literary analysis; emphasis on reading, writing, and speaking skills in the target language. Typically Offered: Fall.

Prereqs: SPAN 302 or Permission

SPAN 309 Spanish for Business (3 credits)

Spanish for business, including vocabulary and cultural competency.

Prereqs: SPAN 302 or Permission

SPAN 310 Spanish for the Professions I (3 credits)

General Education: International
Language and cultural competency for fields including law, police and the community, banking, finances, and human resources.

Prereqs: SPAN 302 or Permission

SPAN 313 Spanish for the Professions II (3 credits)

Language and cultural competency for fields including medicine (social workers, dentists, doctors, and nurses), technology and computer science, human resources, real estate, and housing.

Prereqs: SPAN 302 or Permission

SPAN 398 (s) Internship (1-16 credits)

Credit arranged

SPAN 400 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: SPAN 302 or Permission

SPAN 401 Readings: Spanish Literature (3 credits)

General Education: International
Prereqs: SPAN 302 or Permission

SPAN 402 Readings: Spanish American Literature (3 credits)

General Education: International
Prereqs: SPAN 302 or Permission

SPAN 404 (s) Special Topics (1-16 credits)

Credit arranged

Prereqs: SPAN 302 or Permission

SPAN 405 (s) Professional Development (1-16 credits)

Credit arranged

SPAN 409 Modern Latin American Society (3 credits)

General Education: International
Cross-listed with LAS 409
Analysis of contemporary issues in Latin American society such as gender, race, environment, and immigration from a variety of cultural perspectives (film, newspapers, literature, etc.).

Prereqs: SPAN 306 or LAS 306

SPAN 411 Chicano and Latino Literature (3 credits)

General Education: American Diversity
Survey of Chicano and Latino literature. Typically Offered: Fall.

Prereqs: SPAN 302 or Permission

SPAN 412 Spanish Short Fiction (3 credits)

General Education: International
A survey of the short story in Spain from the 19th Century to the present. Focus on major writers and representative movements and styles. (Fall only) Typically Offered: Varies.

Prereqs: SPAN 302 or Permission

SPAN 413 Spanish American Short Fiction (3 credits)

General Education: International
Cross-listed with LAS 413
General Education: American Diversity. The short story in 19th- and 20th-century Spanish America. Typically Offered: Fall.

Prereqs: SPAN 302

SPAN 419 Latin America Theatre Through Literature (3 credits)

General Education: International
Study of representative dramatic works of Latin America.

Prereqs: SPAN 302 or Permission

SPAN 420 Modern Spanish Theatre Through Literature (3 credits)

General Education: International
Study of representative dramatic works of modern Spain. Typically Offered: Varies.

Prereqs: SPAN 302 or Permission

SPAN 421 Bilingual and Bicultural Identities (3 credits)

General Education: International

The course consists of literary works, theoretical readings, films and documentaries concerned with the complexity of Bilingual and Bicultural concepts. Some of the pressing topics covered in this course will respond to interrogatives such as: What is Bilingual/Bicultural? How does this state affect the development of an identity within the context of Americanness as it is reflected in the Latino/Hispanic Experience in the U. S. ? The course will also focus on negotiation of Latin@ Identity (Mexican/Chicano, Dominican, Puerto Rican/Newyorican, and Cuban/American experiences); Concepts of Race; Immigration, Politics of Identity, Language, Gender and the importance of family to these issues. Typically Offered: Spring (Even Years).

Prereqs: SPAN 302 or Instructor Permission

SPAN 422 Mexican Culture through Cinema (3 credits)

General Education: International

Cross-listed with LAS 422

Examines how fictional representations of Mexico are driven by specific historical, political, economic, and cultural forces. Students will also reflect on the ways in which films and literature can inform our knowledge of race, gender and socio-economic relations and how these representations of Mexican culture through film have changed over time.

Prereqs or Coreqs: SPAN 306 or LAS 306

SPAN 423 Culture and Identity in Spanish Cinema (3 credits)

General Education: International

Examines how Spanish film explores questions of culture and identity. Typically Offered: Varies. Prereqs or

Coreqs: SPAN 305

SPAN 424 Human Rights and Hispanic Cinema (3 credits)

Examines how Hispanic film represents and grapples with the question of human rights.

Prereqs or Coreqs: SPAN 305

SPAN 425 Spanish-English Translation Skills (3 credits)

Theory and practice of translation, Spanish-English and English-Spanish, using a variety of types of text.

Prereqs: SPAN 302 or Permission

SPAN 426 Health and Environment in Latin America (3 credits)

Examines the relationships between health, environment, history, politics, and culture in Latin America.

Prereqs: SPAN 306 or LAS 306

SPAN 449 (s) Practicum in Tutoring (1 credit, max 2)

Graded P/F. Tutorial services performed by advanced students under faculty supervision.

Prereqs: Department Permission

SPAN 498 (s) Internship (1-16 credits)

Credit arranged

SPAN 499 (s) Directed Study (1-16 credits)

Credit arranged

Statistics (STAT)

STAT 153 Introduction to Statistical Reasoning (3 credits)

General Education: Mathematical Ways of Knowing

Cross-listed with MATH 153

A course in statistical literacy, an introduction with emphasis on examples and case studies. Topics include data sources and the distinction between experiments, observational studies, and surveys; graphical and numerical description of data; understanding randomness; central tendency; correlation versus causation; line of best fit; estimation of proportions; and statistical testing.

STAT 204 (s) Special Topics (1-16 credits)

Credit arranged

STAT 251 Statistical Methods (3 credits)

General Education: Mathematical Ways of Knowing

Credit will not awarded for STAT 251 after STAT 301 or STAT 416, or for STAT 416 after STAT 251 or STAT 301. Intro to statistical methods including design of statistical studies, basic sampling methods, descriptive statistics, probability and sampling distributions; inference in surveys and experiments, regression, and analysis of variance. Typically Offered: Fall, Spring and Summer.

Prereqs: MATH 143 (with grade of 'C' or better), MATH 160, MATH 170, or sufficient score on SAT, ACT, or math placement test (see www.uidaho.edu/registrar/registration/placement).

STAT 299 (s) Directed Study (1-16 credits)

Credit arranged

STAT 301 Probability and Statistics (3 credits)

Credit not awarded for STAT 251 after STAT 301. Intended for engineers, mathematicians, and physical scientists. Intro to sample spaces, random variables, statistical distributions, hypothesis testing, basic experimental design, regression, and correlation.

Prereqs: MATH 175.

STAT 404 (s) Special Topics (1-16 credits)

Credit arranged

STAT 407 Experimental Design (3 credits)

Joint-listed with STAT 507

Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 431

STAT 414 Nonparametric Statistics (3 credits)

Joint-listed with STAT 514

Conceptual development of nonparametric methods including one, two, and k-sample tests for location and scale, randomized complete blocks, rank correlation, and runs test. Permutation methods, nonparametric bootstrap methods, density estimation, curve smoothing, robust and rank-based methods for the general linear model, and comparison. Comparison to parametric methods. Additional coursework/project required for graduate credit. Typically Offered: Varies.

Prereqs: STAT 431 Cooperative: open to WSU degree-seeking students.

STAT 417 Statistical Learning and Predictive Modeling (3 credits)

Joint-listed with STAT 517

A comprehensive overview of statistical learning and predictive modeling techniques to analyze large data sets in science, social science, and other data-rich fields including, for example, biology, business, and engineering. Topics include regression, classification, resampling methods, model selection and regularization, tree-based methods, support vector machines, clustering, and text mining. The implementation of the methods will be in R and Python as needed. Basic experience with computer programming is assumed. Additional coursework/project required for graduate credit. Typically Offered: Fall.

Prereqs: STAT 431**STAT 418 Multivariate Analysis (3 credits)**

Joint-listed with STAT 519

The multivariate normal, Hotelling's T^2 , multivariate general linear model, discriminant analysis, covariance matrix tests, canonical correlation, and principle component analysis. Additional coursework/project required for graduate credit. Typically Offered: Spring.

Prereqs: STAT 431 Cooperative: open to WSU degree-seeking students.**STAT 419 Introduction to SAS/R Programming (3 credits)**

An introduction to the SAS and R programming languages. Topics include creating data, importing data, accessing subsets of data, exporting data, plotting and graphing, loops and functions. Course provides a basic knowledge of SAS and R to help students master statistical tools available in SAS and R, including basic statistical analyses.

Prereqs: STAT 251 or STAT 301**STAT 422 Survey Sampling Methods (3 credits)**

Introduction to survey sampling designs and inference including simple, stratified, and cluster sampling; ratio and regression estimators, unequal probability sampling, and population size estimation. Cooperative: open to WSU degree-seeking students.

Prereqs: 'C' or better in either STAT 251 or STAT 301**STAT 426 SAS Programming (3 credits)**

Coverage of a variety of methods for data manipulation, data management, and programming in the SAS language. DATA step programming methods including data transformation, functions for numeric and character data, input of complicated data files, and do loop usage. Data management topics include concatenating data files, sorting and merging data files and ARRAY statement usage. SAS programming with SAS modules such as SAS/Graph, SAS/IML, and SAS/Macro language. Other topics in SAS programming, such as covering other SAS modules in depth.

Prereqs: STAT 251 or STAT 301**STAT 427 R Programming (3 credits)**

Credit not awarded for STAT 427 after STAT 419. Introduction to the R computing language for scientific graphics, statistical analysis, simulation, and mathematical modeling. Topics include functions, data management and manipulation, loops and logical structures, vector and matrix calculations, contemporary graphical displays, probability and simulation, dynamic models, numerical optimization, standard methods of statistical analysis.

Prereqs: STAT 251 or STAT 301**STAT 431 Statistical Analysis (3 credits)**

Concepts and methods of statistical research including multiple regression, contingency tables and chi-square, experimental design, analysis of variance, multiple comparisons, and analysis of covariance. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 251 or STAT 301**STAT 433 Econometrics (3 credits)**

Cross-listed with ECON 453

Application of statistical methods to economics and business studies; emphasis on regression analysis methods.

Prereqs: STAT 251 or STAT 301**STAT 435 Introduction to Bayesian Statistics (3 credits)**

Joint-listed with STAT 535

Exploring the basics of Bayesian thinking with a comparative approach to interpretations of probability. Statistical methods, Bayesian approach to statistical inference. Methods include point and interval estimation under the Normal model, and inference under hierarchical models with emphasis on statistical model building. Computational methods, applications of methods useful for sampling posterior distributions such as rejection sampling, importance sampling, and Markov Chain Monte Carlo. Additional coursework/project required for graduate credit. Typically Offered: Varies.

Prereqs: STAT 431 or equivalent**STAT 436 Applied Regression Modeling (3 credits)**

General Education: Senior Experience

Joint-listed with STAT 516

Statistical modeling and analysis of scientific data using regression model including linear, nonlinear, and generalized linear regression models. Topics also include analysis of survival data, censored and truncated response variables, categorical response variables, and mixed models. Emphasis is on application of these methods through the analysis of real data sets with statistical packages. Additional coursework/projects will be assigned at the 500-level.

Prereqs: STAT 431**STAT 451 Probability Theory (3 credits)**

Cross-listed with MATH 451

Random variables, expectation, special distributions (normal, binomial, exponential, etc.), moment generating functions, law of large numbers, central limit theorem. Cooperative: open to WSU degree-seeking students. (Fall only)

Prereqs or Coreqs: MATH 275 or Permission**STAT 452 Mathematical Statistics (3 credits)**

Cross-listed with MATH 452

Estimation of parameters, confidence intervals, hypothesis testing, likelihood ratio test, sufficient statistics. Cooperative: open to WSU degree-seeking students. (Spring only)

Prereqs: MATH 451 or Permission**STAT 453 Stochastic Models (3 credits)**

Cross-listed with MATH 453

Joint-listed with MATH 538

Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 451 or Permission**STAT 456 Enterprise Quality Management (3 credits)**

Cross-listed with OM 456

Principles of quality management, with a focus on Lean Six Sigma concepts and Define-Measure-Analyze-Improve-Control (DMAIC) approach to managing and improving enterprise quality. Additional work required for graduate credit. May include evening exams. May involve field trips. Typically Offered: Varies.

Prereqs: STAT 251 or STAT 301 or Permission**STAT 498 (s) Internship (1-16 credits)**

Credit arranged

Prereqs: Permission

STAT 499 (s) Directed Study (1-16 credits)

Credit arranged

STAT 500 Master's Research and Thesis (1-16 credits)

Credit arranged

STAT 501 (s) Seminar (1-16 credits)

Credit arranged. This course addresses statistical ethics; statistically oriented research; and deeper and more extensive consideration of topics relevant to but not addressed in other graduate level statistics courses offered during that semester. Formal presentations and reports in journal format are used to enhance written, oral, and presentation communication experience and ability.

STAT 502 (s) Directed Study (1-16 credits)

Credit arranged

STAT 503 (s) Workshop (1-16 credits)

Credit arranged

STAT 504 (s) Special Topics (1-16 credits)

Credit arranged

STAT 507 Experimental Design (3 credits)

Joint-listed with STAT 407

Methods of constructing and analyzing designs for experimental investigations; analysis of designs with unequal subclass numbers; concepts of blocking randomization and replication; confounding in factorial experiments; incomplete block designs; response surface methodology. Additional work required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 431**STAT 514 Nonparametric Statistics (3 credits)**

Joint-listed with STAT 414

Conceptual development of nonparametric methods including one, two, and k-sample tests for location and scale, randomized complete blocks, rank correlation, and runs test. Permutation methods, nonparametric bootstrap methods, density estimation, curve smoothing, robust and rank-based methods for the general linear model, and comparison. Comparison to parametric methods. Additional coursework/project required for graduate credit. Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 431**STAT 516 Applied Regression Modeling (3 credits)**

General Education: Senior Experience

Joint-listed with STAT 436

Statistical modeling and analysis of scientific data using regression model including linear, nonlinear, and generalized linear regression models. Topics also include analysis of survival data, censored and truncated response variables, categorical response variables, and mixed models. Emphasis is on application of these methods through the analysis of real data sets with statistical packages. Additional coursework/projects will be assigned at the 500-level.

STAT 517 Statistical Learning and Predictive Modeling (3 credits)

Joint-listed with STAT 417

A comprehensive overview of statistical learning and predictive modeling techniques to analyze large data sets in science, social science, and other data-rich fields including, for example, biology, business, and engineering. Topics include regression, classification, resampling methods, model selection and regularization, tree-based methods, support vector machines, clustering, and text mining. The implementation of the methods will be in R and Python as needed. Basic experience with computer programming is assumed. Additional coursework/project required for graduate credit. Typically Offered: Fall.

Prereqs: STAT 431**STAT 519 Multivariate Analysis (3 credits)**

Joint-listed with STAT 418

The multivariate normal, Hotelling's T^2 , multivariate general linear model, discriminant analysis, covariance matrix tests, canonical correlation, and principle component analysis. Additional coursework/project required for graduate credit. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

Prereqs: STAT 431**STAT 535 Introduction to Bayesian Statistics (3 credits)**

Joint-listed with STAT 435

Exploring the basics of Bayesian thinking with a comparative approach to interpretations of probability. Statistical methods, Bayesian approach to statistical inference. Methods include point and interval estimation under the Normal model, and inference under hierarchical models with emphasis on statistical model building. Computational methods, applications of methods useful for sampling posterior distributions such as rejection sampling, importance sampling, and Markov Chain Monte Carlo. Additional coursework/project required for graduate credit. Typically Offered: Varies.

Prereqs: STAT 431 or equivalent**STAT 544 Stochastic Models (3 credits, max 3)**

Cross-listed with MATH 538

Joint-listed with STAT 453

Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments required for graduate credit. Cooperative: open to WSU degree-seeking students.

Prereqs: MATH 451 or Permission.**STAT 550 Regression (3 credits)**

Theory and application of regression models including linear, nonlinear, and generalized linear models. Topics include model specification, point and interval estimators, exact and asymptotic sampling distributions, tests of general linear hypotheses, prediction, influence, multicollinearity, assessment of model fit, and model selection. Recommended preparation: MATH 330 and STAT 452.

STAT 555 Statistical Ecology (3 credits)

Cross-listed with WLF 555

Stochastic models in ecological work; discrete and continuous statistical distributions, birth-death processes, diffusion processes; applications in population dynamics, population genetics, ecological sampling, spatial analysis, and conservation biology. Cooperative: open to WSU degree-seeking students. (Spring, alt/years)

Prereqs: MATH 451 or Permission

STAT 565 Computer Intensive Statistics (3 credits)

Numerical stability, matrix decompositions for linear models, methods for generating pseudo-random variates, interactive estimation procedures (Fisher scoring and EM algorithm), bootstrapping, scatterplot smoothers, Monte Carlo techniques including Monte Carlo integration and Markov chain Monte Carlo. Cooperative: open to WSU degree-seeking students. (Alt/years)

Prereqs: STAT 451, STAT 452, MATH 330, and computer programming experience or Permission

STAT 597 (s) Consulting Practicum (1-16 credits)

Credit arranged. Students will gain experience in statistical consulting and data analysis, using multiple statistical software packages in the analysis process. Topics include communication of statistical information and analysis to non-statisticians, ethics, and computing. Emphasis is placed on written and oral presentation of statistical analysis plans and results.

STAT 598 (s) Internship (1-16 credits)

Credit arranged. Students gain experience in statistical consultation and/or statistical data analysis in their present place of employment or an arranged internship organization. Students are jointly accountable to a faculty advisor and a person providing oversight of the individual's efforts within the organization. All internship experiences must be pre-approved.

STAT 599 (s) Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Technology Management (TM)

TM 404 (s) Special Topics (1-16 credits)

Credit arranged.

TM 419 Industrial Sustainability Analysis (3 credits)

Cross-listed with INDT 419

Joint-listed with TM 519

This course covers two practical topics, which are Sustainability Assessment (Topic 1) and Advanced Manufacturing (Topic 2). Topic 1 establishes the concept of sustainability, and sustainable design and manufacturing. Under this section, we introduce the intersection of sustainability and manufacturing through sustainable development, sustainability principles, and sustainable engineering. Topic 2 provides an overview of what Advanced Manufacturing (AM) is, what approaches are used, what the possible applications are, and what the limitations of the technology are. We focus on AM processes, principles, sustainability performance of AM, and sustainability assessment of AM at the macro and micro level. Students in the 500-level class will complete two different projects and students in the 400-level class will complete one project. The class projects include techno-economic and socio-environmental studies in the broad area of food-energy-water processes and systems.

TM 482 Project Engineering (3 credits)

Modern project engineering techniques for planning, scheduling, and controlling typical engineering and construction projects; linear programming and other optimization techniques as applied to resource allocation; microcomputer applications are emphasized and appropriate software used throughout the course.

Prereqs: 'C' or better in STAT 251, STAT 301, or equivalent; and Senior standing; or Permission.

TM 500 Master's Research and Thesis (1-16 credits)

Credit arranged

TM 501 (s) Seminar (1-16 credits)

Credit arranged

TM 502 (s) Directed Study (1-16 credits)

Credit arranged

TM 504 (s) Special Topics (1-16 credits)

Credit arranged

TM 505 (s) Professional Development (1-16 credits)

Credit arranged

TM 510 Technology Management Fundamentals (3 credits)

Fundamental principles of technology management. The course focuses on management theory and techniques associated primarily with project management, management theory applied to high technology environments; management processes and techniques; project leadership role of the engineering manager in technology organizations; team-taught by business, engineering, and technology management faculty.

Prereqs: Permission

TM 513 Nuclear Criticality Safety (3 credits)

Cross-listed with NE 535

Nuclear criticality safety including nuclear physics, fusion and neutron multiplication, moderation and reflection of neutrons, criticality issues in the fuel cycle, critical experiments and sub-critical limits, calculations of criticality, nuclear criticality safety practices, emergency procedures, and nuclear regulations and standards.

Prereqs: NE 450 or Permission

TM 514 Nuclear Safety (3 credits)

Cross-listed with NE 514

An in-depth technical study of safety issues within the nuclear fuel cycle and within various reactor types. Evaluation methods, system disturbances, safety criteria, containment, NRC licensing, and codes for safety analysis will be presented. Case studies of reactor accidents and corrective measures included.

Prereqs: Permission

TM 516 Nuclear Rules and Regulations (3 credits)

Cross-listed with NE 516

An in-depth examination of nuclear regulatory agencies; major nuclear legislation; current radiation protection standards and organizational responsibility for their implementation.

Prereqs: Permission

TM 517 Critical Infrastructure Security and Resilience Fundamentals (3 credits)

This course provides an introduction to the policy, strategy, and practical application of critical infrastructure security and resilience from an all-hazards perspective. It describes the strategic context presented by the 21st century, and discusses the challenges and opportunities associated with public-private partnerships in infrastructure protection, risk analysis and mitigation, and incident response.

TM 519 Industrial Sustainability Analysis (3 credits)

Joint-listed with INDT 419 and TM 419

This course covers two practical topics, which are Sustainability Assessment (Topic 1) and Advanced Manufacturing (Topic 2). Topic 1 establishes the concept of sustainability, and sustainable design and manufacturing. Under this section, we introduce the intersection of sustainability and manufacturing through sustainable development, sustainability principles, and sustainable engineering. Topic 2 provides an overview of what Advanced Manufacturing (AM) is, what approaches are used, what the possible applications are, and what the limitations of the technology are. We focus on AM processes, principles, sustainability performance of AM, and sustainability assessment of AM at the macro and micro level. Students in the 500-level class will complete two different projects and students in the 400-level class will complete one project. The class projects include techno-economic and socio-environmental studies in the broad area of food-energy-water processes and systems.

TM 525 Emergency Management and Planning (3 credits)

A study of the basic principles in emergency management and planning in the United States. This course is not directed at any particular type of hazard, but the processes and considerations of planning for all-hazards along with the basics of generic protective actions and the planning concepts supporting effective protective action recommendations.

TM 526 Community Emergency Planning (3 credits)

A study of the theory and practice of community emergency planning. The Citizen Corps, Principles of Emergency Planning, and CERT programs will be studied. Cases are studied in order to assist students in understanding the management and leadership complexity associated with modern emergencies and disasters. Recommended Preparation: TM 525.

TM 528 Accident Investigation (3 credits)

In-depth examination and implementation of system safety concepts, principles, and methods; development of skills in accident investigation, audit and appraisal, operational readiness, and system safety analysis and review. Recommended Preparation: INDT 442.

TM 529 Risk Assessment (3 credits)

Cross-listed with NE 529

In-depth evaluation and analysis techniques used to determine the risk of industrial, process, nuclear, and aviation industries; fault tree analysis; human reliability analysis; failure mode and effect analysis.

TM 533 Chemical Hazards (3 credits)

Emergency responders can encounter a wide range of chemical hazards. Topics include information on interpreting hazardous chemical labels and Material Safety Data Sheets and the relationship between those two methods of hazard communication. Acute and chronic effects of hazardous chemicals to which responders may be exposed will be discussed. Recommended Preparation: TM 525.

TM 534 Biological Hazards (3 credits)

Emergency responders can encounter a wide range of biological hazards. The objectives of this course are to understand the nature of biological hazards and how to control them. The biological hazards to be discussed are Bacteria, Viruses, Fungi/Molds, Protozoa, Prions – infectious proteins, Biological Toxins. Recommended Preparation: TM 525.

TM 535 Radiation Detection and Measurement (3 credits)

Cross-listed with NE 554

Radiation transport and shielding concepts. Methods for quantifying attenuation of nuclear particles and electromagnetic radiation. Radiation detection methods, data acquisition and processing.

Prereqs: MATH 310 or Permission

TM 537 Nuclear Material Storage, Transportation and Disposal (3 credits)

Cross-listed with NE 527

There is a wide range of nuclear materials that are stored, transported and disposed of each day. The materials include medical radioisotopes, new fuel pellets, used fuel, and industrial radioisotopes. This course will cover the regulations that govern nuclear material storage, transportation and disposal, as well as the engineering requirements and practical aspects of handling these materials.

TM 538 Management of Nuclear Facilities (3 credits)

Cross-listed with NE 528

Nuclear facilities need a sustainable management system to make sure that matters of importance are not dealt with in isolation of other issues in the decision making process. Integrating all relevant issues, ranging from safety, security and safeguards to health and economic and environmental questions, leads to well-informed and balanced decisions. This course addresses from a practical point of view the safety and regulatory issues of operating and planned reactors in the U. S. and other countries.

TM 552 Industrial Ergonomics (3 credits)

A course designed to focus on work design and ergonomics in occupational settings. Specific attention will be focused on introducing the terminology and the techniques used in work design, and on the fundamental concepts embodied in industrial ergonomics. (Summer only)

TM 596 Capstone Integration (1 credit)

Capstone integration of degree material in Technology Management and comprehensive final exam.

Prereqs: Advisor or Major Professor Permission

TM 598 (s) Internship (1-16 credits)

Credit arranged

TM 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Theatre Arts (THE)

THE 101 Introduction to the Theatre (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

For non-majors. Building an appreciation for theatre as an art form through understanding the creative process of the playwright, the director, the designer, and the actor. Attendance at theatre productions required.

THE 102 Introduction to Design (3 credits)

An introduction to the concept of basic design elements and development of visual vocabulary for theatrical design. This course explores the creative collaborative process of theatrical design through a variety of hands-on projects in scenery, costumes, lighting and sound. This course is a prerequisite for THE 201, THE 202, THE 205.

THE 103 Theatre Technology (3 credits)

Introduction to theatre production spaces, shop tools, construction materials, and stage equipment; theories and methods used in lighting and in the construction of scenery. Course includes a lab component. Typically Offered: Fall and Spring.

THE 104 Costume Technology (3 credits)

Methods of costume construction techniques; intro to sewing, crafting and costuming skills. Course includes a lab component. Typically Offered: Fall and Spring.

THE 105 Basics of Performance I (3 credits)

Intro to performance; techniques of relaxation, observation, and justification; work in improvisation, sensory exploration, image-making, and beginning textual analysis; initial monologue and scene performance. One lecture and 2 hours of lab per week.

THE 106 Basics of Performance II (3 credits)

A continuation in the training of performance to deepen the experiential understanding and techniques of relaxation, observation, and justification; work in improvisation, sensory exploration, image-making, and beginning textual analysis, including initial monologue and scene performance. One lecture and 2 hours of lab per week.

Prereqs: 'C' or better in THE 105 or Permission

THE 200 (s) Seminar (1-16 credits)

Credit arranged

THE 201 Scene Design I (3 credits)

Development of basic skills in visualization, period research, graphic techniques, and script interpretation in scenery.

Prereqs: THE 102

THE 202 Costume Design I (3 credits)

Costume design skills including script/character analysis, fabric choices, design process, period research, and drawing/painting skills.

Prereqs: THE 102

THE 203 (s) Workshop (1-16 credits)

Credit arranged

THE 204 (s) Special Topics (1-16 credits)

Credit arranged

THE 205 Lighting Design I (3 credits)

Basic and foundational stage lighting equipment, lighting methods, and theory for theatrical production; basic electrical maintenance, hang, focus, and programming of realized productions.

Prereqs: THE 102

THE 298 (s) Internship (1-16 credits)

Credit arranged

THE 299 (s) Directed Study (1-16 credits)

Credit arranged

THE 305 Intermediate Acting I (3 credits)

Exploration of Stanislavsky System "An Actor Prepares," using contemporary text with emphasis on connection and pursuing action and imagery work. One lecture and 3 hours of lab per week.

Prereqs: 'C' or better in THE 105 and THE 106 and Permission

THE 306 Intermediate Acting II (3 credits)

Continued exploration of Stanislavsky System "Building a Character," using modern classic texts such as Anton Chekhov with emphasis on emotional and physical rigor and discipline. One lecture and 3 hours of lab per week.

Prereqs: 'C' or better in THE 105 and THE 106 and Permission

THE 320 Theatre Management (3 credits)

Basic and foundational stage management and standard management practices relating to theatre production and business, funding, and public relations.

THE 371 Play Analysis (3 credits)

Critical intro to plays as drama and theatre; an approach to tragic and comic genres; major dramatists of the 20th century culminating in an analysis of contemporary theatre styles.

THE 389 (s) Performance Area Participation (1 credit, max 8)

Open to majors and nonmajors by permission. Practical experience in acting, directing, playwriting, dramaturgy, other performance areas - rehearsal through performance.

Prereqs: Permission

THE 390 (s) Theatre Practice II (1 credit, max 8)

Open to nonmajors. Advanced practical experience in all aspects of theatre production.

THE 400 (s) Seminar (1-16 credits)

Credit arranged

THE 403 (s) Workshop (1-16 credits)

Credit arranged

THE 404 (s) Special Topics (1-16 credits)

Credit arranged

THE 405 Individual Instruction in Performance (1-16 credits)

Credit arranged. Individualized coaching in performance. One hour of lab per week per credit.

THE 406 Design Studio (1-16 credits)

Credit arranged. Individual training in an area of theatre design; includes an advanced design assignment and the public presentation of a play.

THE 410 Costume Design II (3 credits, max 12)

Joint-listed with THE 510

Emphasis on developing characterization, stylization, and fabric choice; explore advanced rendering techniques; continuation of portfolio development. Additional projects/assignments required for graduate credit. Three lectures and 1 hour of lab per week.

Prereqs: 'C' or better in THE 202 or Permission

THE 412 Theatre Methods Practicum (1 credit)

Implementation of theatre methods, research, curricula, and technology in the classrooms. The course will include approximately 30 hours in grade 6-12 classrooms and approximately 15 hours of associated scheduled activities. Typically Offered: Spring.

Coreqs: THE 411

THE 417 Movement Studio (3 credits, max 18)

Joint-listed with THE 517

Emphasizes body awareness utilizing yoga and related techniques to increase strength and flexibility, heighten sensory awareness, generate dynamic energy, and mind/body connections. Students are encouraged to explore the creative boundaries of their body and discover the body's effectiveness as a primary expressive tool in performance. Students earning graduate credit will be held to higher standards.

Prereqs: Acceptance into BFA/MFA program or Permission

THE 423 Foundations of Stage Intimacy and Radical Empathy in the Theatre (3 credits)

Joint-listed with THE 523

This is a course on the best practices and basic tools for staging intimacy. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

THE 425 BFA Acting Studio (3 credits, max arranged)

Joint-listed with THE 525

Rigorous study and practice in performance. Areas of specialization may include: Shakespeare, Devising, Commedia del'arte, Period Styles, Asian Theatre, Animals, Realism, Comedy. The course will be repeated each semester by BFA candidates. Prereq for 425: Acceptance into BFA program Prereq for 525: Acceptance into MFA program

THE 440 Playwriting (3 credits)

Joint-listed with THE 540

Introduce the student to the fundamental elements of playwriting, including dramatic structure and action, developing theme and characterization, understanding stagecraft and writing dialogue.

THE 445 Theatre and Film of the Holocaust (3 credits)

Joint-listed with THE 545

This course studies the plays and films of the Holocaust examining the unique relationship between historical fact and the artist's response to the impact of those facts on the human character. The course treats the films and dramatic literature of the Holocaust as a unique genre of "survivalist" literature of atrocity, which is as much a response to one of history's darkest periods as it is an emergence of a new artistic form. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

THE 447 Screenwriting (3 credits)

Cross-listed with ENGL 447, JAMM 447

Joint-listed with ENGL 547, THE 547

Introduction to the study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.

Prereqs: ENGL 231 or JAMM 231 or permission

THE 452 Theatre Historiography (3 credits)

Joint-listed with THE 552

This course is an introduction to the work of the theatre historian and explores concepts like: periodization, historical style, research on historical context, training with primary and secondary resources, archival research, and ethnography/oral history training; as part of this training, students will explore theatre history from throughout the world from Ancient Egypt through to about 1700.

THE 453 (s) Topics in World Theatre History (3-16 credits, max arranged)

General Education: Humanistic and Artistic Ways of Knowing, International

Joint-listed with THE 553

The course Topics in World Theatre History will regularly rotate geographic/cultural foci including Latin American Theatre History, African American/Black Theatre History, Asian Theatre History, and US Theatre History. Additional course requirements for graduate credit.

Recommended Preparation: THE 452 Theatre Historiography. Typically Offered: Varies.

THE 455 (s) Theatre for Social Change (3 credits, max 9)

Joint-listed with THE 555

Theatre for Social Change is a variable topic course that focuses on social movements, theatre artists, and theatre companies that share a goal of changing society. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

THE 456 (s) Studies in Theatre, Gender, and Sexuality (3 credits, max 9)

Joint-listed with THE 556

Interdisciplinary explorations of topics such as queer theatre, feminist theatre, gender in performance, or sexuality in the theatre. Additional workload required for graduate students. Typically Offered: Varies.

THE 460 Professional Theatre Conference Participation (1 credit, max 12)

Joint-listed with THE 560

Professional Theatre Conference Participation. Additional work required for graduate credit.

THE 463 (s) Advanced Costume Technology Studio (3 credits, max 9)

Joint-listed with THE 563

Advanced theatrical costume construction techniques and strategies, including tailoring, costume crafts, and period undergarment construction. Materials selection and handling. May be repeated for course credit. Graduate students will have additional or more complex assignments. Typically Offered: Varies.

Prereqs: THE 104 with grade of C or higher

THE 464 Scenographic Techniques (3 credits)

Joint-listed with THE 564

Practical survey of graphics used in design and execution of scenery for the stage, including drafting, perspective, front and rear elevations, painters elevations, and properties of design and drafting.

Prereqs: 'C' or better in THE 201 or Permission

THE 465 Advanced Scene Design (3 credits)

Joint-listed with THE 565

Development of a conceptual approach to design through assorted design projects.

Prereqs: 'C' or better in THE 201 or Permission

THE 466 Scene Painting (3 credits)

Joint-listed with THE 566

Introduction to the art, practice and technique of large-scale decorative painting for the stage. Development of brush and application techniques, color mixing, and layout skills. Provides instruction in the imitation of wood, marble, brick and stone, as well as sections on stenciling, faux finishing and trompe l'oeil. (Fall only)

Prereqs: 'C' or better in THE 201 or Permission

THE 468 Theatre History I (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

A comprehensive world survey of major theatrical trends, theorists, and practitioners from Ancient Egypt to the end of the 17th century.

THE 469 Theatre History II (3 credits)

General Education: Humanistic and Artistic Ways of Knowing

A comprehensive world survey of major theatrical trends, theorists, and practitioners from the start of the 18th century to the present.

THE 471 Directing (3 credits)

Joint-listed with THE 571

Preparation of a play from casting to performance. Additional projects/assignments required for graduate credit. Three lectures and one hour of lab per week. Recommended Preparation: THE 305.

THE 472 Directing II (3 credits)

Staging and interpretation of a play; developing a production concept; coaching actors. Three lectures and one hour of lab per week.

Recommended Preparation: Upper-division acting course at 300/400-level.

Prereqs: Permission.

THE 475 (s) Studies in Dramaturgy (3 credits, max 12)

Joint-listed with THE 575

Explores the disciplines of dramaturgy - new play dramaturgy, dance dramaturgy, production dramaturgy, and institutional dramaturgy.

Additional workload required for graduate credit. Typically Offered: Varies.

THE 483 Senior Capstone Project (1 credit)

General Education: Senior Experience

A capstone class for graduating theatre majors that requires students to synthesize their experiences in dramatic theory, literature, theatre performance, and production. Seminar students prepare a service learning project and a personal philosophy statement that summarizes their experience and their current vision of the theatre. The class also includes a component in resume preparation and professional presentation.

THE 484 Advanced Lighting Design (3 credits, max 12)

Joint-listed with THE 584

Advanced lighting design theories and practice through design of assorted productions in realistic drama, dance, arena, thrust, and mystical theatre. Heavy emphasis on design communication and computer drafting. Additional projects/assignments required for graduate credit.

Prereqs: 'C' or better in THE 205 or Permission

THE 485 Vectorworks (3 credits)

Joint-listed with THE 585

Introduction to Vectorworks that will cover everything from the basic tools to creating 3D design concepts for the theatre. Additional work will be assigned for graduate credit. Typically Offered: Varies.

THE 498 (s) Internship (1-16 credits)

Credit arranged

THE 499 (s) Directed Study (1-16 credits)

Credit arranged

THE 501 (s) Seminar (1-16 credits)

Credit arranged

THE 502 (s) Directed Study (1-16 credits)

Credit arranged

THE 503 (s) Workshop (1-16 credits)

Credit arranged

THE 504 (s) Special Topics (1-16 credits)

Credit arranged

THE 505 Individual Instruction in Performance (1-16 credits, max arranged)

Joint-listed with THE 405

Credit arranged. Individualized coaching in performance. One hour of lab per week per credit.

THE 510 Costume Design II (3 credits, max 12)

Joint-listed with THE 410

Emphasis on developing characterization, stylization, and fabric choice; explore advanced rendering techniques; continuation of portfolio development. Additional projects/assignments required for graduate credit. Three lectures and 1 hour of lab per week.

Prereqs: 'C' or better in THE 202 or Permission

THE 512 (s) MFA Directing Studio (3 credits, max 18)

Advanced individual study in directing, including work in staging, styles, and interpretation.

THE 513 (s) MFA Design Studio (3 credits, max 18)

Advanced individual study in all areas of theatrical design with emphasis on portfolio development.

THE 515 MFA Jury/Portfolio Review (1 credit, max arranged)

Preparation and evaluation of performance monologues and design portfolios.

Coreqs: MFA studio courses

THE 517 Movement Studio (3 credits, max 18)

Joint-listed with THE 417

Emphasizes body awareness utilizing yoga and related techniques to increase strength and flexibility, heighten sensory awareness, generate dynamic energy, and mind/body connections. Students are encouraged to explore the creative boundaries of their body and discover the body's effectiveness as a primary expressive tool in performance. Students earning graduate credit will be held to higher standards.

Prereqs: Acceptance into BFA/MFA program or Permission.

THE 522 (s) Advanced Studies in Theatre (3 credits, max 18)

This course is for advanced studies in theatre history, analysis, and criticism for creative writing, performance, directing, design, and technology graduate candidates. Topics are coordinated and rotated departmentally and are beyond the departmental history and play analysis core.

THE 523 Foundations of Stage Intimacy and Radical Empathy in the Theatre (3 credits)

Joint-listed with THE 423

This is a course on the best practices and basic tools for staging intimacy. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

THE 525 MFA Acting Studio (3 credits, max arranged)

Joint-listed with THE 425

Rigorous study and practice in performance. Areas of specialization may include: Shakespeare, Devising, Commedia del'arte, Period Styles, Asian Theatre, Animals, Realism, Comedy. The course will be repeated each semester by BFA candidates. Prereq for 425: Acceptance into BFA program Prereq for 525: Acceptance into MFA program

THE 526 MFA Playwriting Workshop (3 credits, max 18)

The primary goal of the MFA Playwriting Workshop is to help the writers develop their unique voice and vision; understand the role of the writer within a historical, cultural and political context; and expose them to a variety of styles and approaches to creating new work for both stage and screen. Toward that end, the Playwriting Workshop fosters a safe but challenging creative environment, in which writers are presented with assignments designed to help them identify that set of aesthetic concerns which will form the foundation of their Voice and Style as a writer. MFA candidates in Dramatic Writing enroll in this course each semester they are in the program.

THE 527 (s) Theatre Pedagogy Lab (3 credits, max 99)

Examines current trends and advances in teaching theatre in K-12 settings as well as in higher education. Typically Offered: Spring.

THE 535 Production Design (3 credits, max 12)

Design responsibility for a main stage production.

Prereqs: Department Permission

THE 545 Theatre and Film of the Holocaust (3 credits)

Joint-listed with THE 445

This course studies the plays and films of the Holocaust examining the unique relationship between historical fact and the artist's response to the impact of those facts on the human character. The course treats the films and dramatic literature of the Holocaust as a unique genre of "survivalist" literature of atrocity, which is as much a response to one of history's darkest periods as it is an emergence of a new artistic form. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

THE 547 Screenwriting (3 credits)

Cross-listed with ENGL 547
Joint-listed with ENGL 447, JAMM 447

, THE 447. Introduction to the study of the fundamental elements of feature film screenwriting; techniques of developing story lines and advancing a narrative in a visual way using the industry standard of a tightly structured long-form feature film. Additional projects/assignments required for graduate credit.

THE 552 Theatre Historiography (3 credits)

Joint-listed with THE 452

This course is an introduction to the work of the theatre historian and explores concepts like: periodization, historical style, research on historical context, training with primary and secondary resources, archival research, and ethnography/oral history training; as part of this training, students will explore theatre history from throughout the world from Ancient Egypt through to about 1700.

THE 553 (s) Topics in World Theatre History (3-16 credits, max arranged)

General Education: Humanistic and Artistic Ways of Knowing, International
Joint-listed with THE 453

The course Topics in World Theatre History will regularly rotate geographic/cultural foci including Latin American Theatre History, African American/Black Theatre History, Asian Theatre History, and US Theatre History. Additional course requirements for graduate credit. Recommended Preparation: THE 452 Theatre Historiography. Typically Offered: Varies.

THE 554 Foundations of American Theatre (3 credits)

This course will examine the foundations of American theatre from the late 18th century through the early 20th century. The goal of the course is to provide students with a firm historical and theoretical foundation for many American plays that they will encounter as contemporary theatre artists. Special attention will be paid to movements and/or plays that established tropes that still predominate in contemporary American theatre. Typically Offered: Varies.

THE 555 (s) Theatre for Social Change (3 credits, max 9)

Joint-listed with THE 455

Theatre for Social Change is a variable topic course that focuses on social movements, theatre artists, and theatre companies that share a goal of changing society. Additional projects/assignments required for graduate credit. Typically Offered: Varies.

THE 556 (s) Studies in Theatre, Gender, and Sexuality (3 credits, max 9)

Joint-listed with THE 456

Interdisciplinary explorations of topics such as queer theatre, feminist theatre, gender in performance, or sexuality in the theatre. Additional workload required for graduate students. Typically Offered: Varies.

THE 560 Professional Theatre Conference Participation (1 credit, max 12)

Joint-listed with THE 460

Professional Theatre Conference Participation. Additional work required for graduate credit.

THE 563 (s) Advanced Costume Technology Studio (3 credits, max 9)

Joint-listed with THE 463

Advanced theatrical costume construction techniques and strategies, including tailoring, costume crafts, and period undergarment construction. Materials selection and handling. May be repeated for course credit. Graduate students will have additional or more complex assignments. Typically Offered: Varies.

THE 564 Scenographic Techniques (3 credits)

Joint-listed with THE 464

Practical survey of graphics used in design and execution of scenery for the stage, including drafting, perspective, front and rear elevations, painters elevations, and properties of design and drafting.

Prereqs: 'C' or better in THE 201 or Permission

THE 565 Advanced Scene Design (3 credits)

Joint-listed with THE 465

Development of a conceptual approach to design through assorted design projects.

Prereqs: 'C' or better in THE 201 or Permission

THE 566 Scene Painting (3 credits)

Joint-listed with THE 466

Introduction to the art, practice and technique of large-scale decorative painting for the stage. Development of brush and application techniques, color mixing, and layout skills. Provides instruction in the imitation of wood, marble, brick and stone, as well as sections on stenciling, faux finishing and trompe l'oeil. (Fall only)

Prereqs: 'C' or better in THE 201 or Permission

THE 571 Directing (3 credits)

Joint-listed with THE 471

Preparation of a play from casting to performance. Additional projects/assignments required for graduate credit. Three lecture and one hour of lab per week. Recommended Preparation: THE 305

THE 575 (s) Studies in Dramaturgy (3 credits, max 12)

Joint-listed with THE 475

Explores the disciplines of dramaturgy - new play dramaturgy, dance dramaturgy, production dramaturgy, and institutional dramaturgy. Additional workload required for graduate credit. Typically Offered: Varies.

THE 584 Advanced Lighting Design (3 credits, max 12)

Joint-listed with THE 584

Advanced lighting design theories and practice through design of assorted productions in realistic drama, dance, arena, thrust, and mystical theatre. Heavy emphasis on design communication and computer drafting. Additional projects/assignments required for graduate credit.

Prereqs: 'C' or better in THE 205 or Permission

THE 585 Vectorworks (3 credits)

Joint-listed with THE 485

Introduction to Vectorworks that will cover everything from the basic tools to creating 3D design concepts for the theatre. Additional work will be assigned for graduate credit. Typically Offered: Varies.

THE 595 Professional Off-Campus Studio (3 credits, max 18)

This is a studio course designed for professional off-campus graduate students only. The course is composed of one-on-one mentoring for off-campus projects.

Prereqs: Permission

THE 596 MFA Exit Project (3 credits)

Culminating creative project for MFA candidates.

Prereqs: Department Permission

THE 597 (s) Practicum (1-16 credits)

Credit arranged. This course is an experiential learning course supervised by theatre faculty to provide the student with a practical application of theatrical theory.

THE 598 (s) Internship (1-16 credits)

Credit arranged

THE 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

Virtual Technology/Design (VTD)

VTD 101 Introduction to Virtual Reality (3 credits)

This course explores introductory design methods, history, and theory of virtual reality (VR). Within this context we will explore the technical application of VR in the fields of medicine, engineering, education, design, art, simulation, training, and entertainment. This course is designed to allow students the ability to develop their cognitive sensibilities, and technical design skills required to produce VR experiences. Each week the course will build off student lead projects and assigned exercises that will explore the fundamentals of VR. During the first half of the course students will explore the modern construct of "virtual", with the second half of the class dissecting the philosophical human perception of "reality" itself. Typically Offered: Fall and Spring.

VTD 151 Virtual World Building 1 (2 credits)

Introduction to the processes and principles of design associated with virtual world building. Two 2-hour lectures per week and assigned work. Recommended Preparation: ART 110 and ART 121

VTD 151L Lab: Virtual World Building 1 (1 credit)

1 credit This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 151: Virtual World Building 1 course.

Coreqs: VTD 151 or Permission

VTD 152 Virtual World Building 2 (2 credits)

Applied tools and techniques. Exploration of the processes and principles of design associated with virtual building. Two 2-hour lectures per week and assigned studio coursework. Typically Offered: Fall.

Coreqs: VTD 151

VTD 152L Lab: Virtual World Building 2 (1 credit)

1 credit This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 152: Virtual World Building 2 course.

Coreqs: VTD 152 or Permission

VTD 153 Virtual World Building 3 (2 credits)

Intermediate level virtual world building with an emphasis on intermediate-level tools and techniques for creating more complex environments, modeling, lighting, materials, characters, interaction, and behaviors. Two 2-hour lectures per week and assigned work. Recommended Preparation: ART 110 and ART 121.

Prereqs: VTD 152

VTD 153L Lab: Virtual World Building 3 (1 credit)

1 credit This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 153: Virtual World Building 3 course.

Coreqs: VTD 153 or Permission

VTD 154 Virtual World Building 4 (2 credits)

Synthesis of processes, principles, tools, and techniques associated with virtual world building. Two 2-hour lectures per week and assigned work. Typically Offered: Spring.

Coreqs: VTD 153

VTD 154L Lab: Virtual World Building 4 (1 credit)

1 credit This course is designed to support and further develop the comprehension of virtual reality design technology within the VTD 154: Virtual World Building 4 course.

Coreqs: VTD 154 or Permission

VTD 200 (s) Seminar (1-16 credits)

Credit arranged

VTD 201 History & Theory of VR (3 credits)

This seminar course is designed to develop the historical and philosophical understanding of virtual reality (VR) technology and its cultural evolution. The course will explore the formal description of VR technology and interpret recent psychological theories of VR knowledge construction.

Prereqs: VTD 154

VTD 204 (s) Special Topics (1-16 credits)

Credit arranged

VTD 245 Advanced Modeling (3 credits)

Exploration of methods used for modeling and sculpting organic surfaces focused on the creation of character and avatar for high and low polygon 3D digital models. Three 1 hour lecture/labs per week and associated work. (Fall only)

Prereqs: VTD 154

VTD 246 Advanced Lighting and Materials (3 credits)

Exploration of methods for illuminating and texturing virtual objects and environments. Foreground, middleground and background rendering issues are examined through topics that include radiosity, ray-tracing, procedural materials and render engine options. Three 1-hour lecture/labs per week and associated work. (Fall only)

Prereqs: VTD 154

VTD 253 Virtual Design I (3 credits)

Investigation of the art and science of virtual design, integrating creative problem solving skills with computer technologies. Sequence of exercises explores the problem domains of virtual objects and environments. Two 3-hour studios per week and assigned work. (Fall only)

Prereqs: VTD 154

VTD 254 Virtual Design II (3 credits)

Continued development of critical thinking and problem solving skills through a sequence of exercises that emphasize design process, concept and context driven solutions to virtual, tangible, and integrated projects. Two 3-hour studios per week and assigned work. (Spring only)

Prereqs: VTD 253 or Permission

VTD 271 Cross-Reality Technology I (3 credits)

Introduction to the fundamentals of Cross-Reality (XR) technologies, explore the development and delivery of interactive immersive digital worlds that transform and combine physical reality into virtual experiences. Two 1-1/2-hour lecture-labs per week and associated work. (Fall only) Typically Offered: Fall and Spring.

Prereqs: VTD 154

VTD 299 (s) Directed Study (1-16 credits)

Credit arranged

VTD 301 Theory & Applications of VR (3 credits)

This seminar course is designed to develop the student's understanding of virtual reality (VR) design theory and application. The course will challenge students to develop new concepts for VR that have the potential to significantly impact society and expand on current concepts of the built environment.

Prereqs: VTD 201 or Permission

VTD 355 Virtual Design III (4 credits)

Introduction to virtual design and relationship to human needs; focus on design process and expansion of vocabulary associated with virtual environments; experimentation & creativity encouraged. Three 3-hour studios per week and assigned work. (Fall only)

Prereqs: VTD 254 or Permission

VTD 356 Virtual Design IV (4 credits)

Design development of conceptual and technical aspects of virtual environments; exploration of design issues from conception to delivery. Three 3-hour studios per week and assigned work. (Spring only)

Prereqs: VTD 355 or Permission

VTD 367 Animation and Visual Effects (3 credits)

Exploration of methods used for visual and experiential communication, problem solving, and storytelling through linear and interactive 3D computer generated animation. Three 1-hour lecture/labs per week and associated work. Typically Offered: Spring.

Prereqs: VTD 266 or Permission

VTD 372 Cross-Reality Technology 2 (3 credits)

Building upon the foundational knowledge of Cross-Reality (XR) technologies, exploring how current and emerging versions of XR technologies can enhance XR interactions (object-oriented and event-driven) and user experiences (story telling/presence/social/multiuser) in virtual worlds. Two 1-1/2-hour lecture/labs per week and associated work. (Spring only)

Prereqs: VTD 271 or Permission

VTD 380 Advanced Character Design (3 credits)

Exploration of advanced workflows and methods for entertainment focused character design. This course will cover advanced digital painting techniques and basic image compositing in Photoshop while also covering digital sculpting and rendering using Zbrush. One 3-hour lecture/lab per week with associated work.

Prereqs: Instructor Permission

VTD 398 (s) Internship (1-16 credits)

Credit arranged

VTD 400 (s) Seminar (3 credits)**VTD 404 (s) Special Topics (1-16 credits)**

Credit arranged

VTD 425 Human Technological Systems and Human Machine Interface Seminar (3 credits)

The course is an overview of user interaction design, and evaluation of physical and virtual human-machine systems. Topics include introduction to human factors, human technological systems, usability evaluation, human machine interface (HMI), human computer interaction (HCI) in virtual reality, human error, human performance, mixed-initiative systems (intelligent and autonomous teaming), design and prototyping. This is an online course to introduce Virtual Technology and Design students to human factors, human computer interaction design and evaluation, emphasizing mixed-initiative systems and virtual reality. The first half of the course develops the theory and during the second half, students lead and conduct individual projects related to the course content. Typically Offered: Fall and Spring

VTD 457 Capstone Design Studio I (6 credits)

General Education: Senior Experience

Sequential contract courses built around the collective content of five interdisciplinary clusters; research, design and implementation of comprehensive virtual design project. Three 3-hour studios per week and associated work.

Prereqs: VTD 356

VTD 458 Capstone Design Studio II (6 credits)

Sequential contract courses built around the collective content of five interdisciplinary clusters; research, design and implementation of comprehensive virtual design project. Three 3-hour studios per week and associated work.

Prereqs: VTD 457

VTD 497 Teaching Assistant, Undergraduate (1-16 credits)

Credit arranged. Teaching assistant services performed by advanced undergraduate students with faculty supervision.

VTD 499 (s) Directed Study (1-16 credits)

Credit arranged

VTD 504 (s) Special Topics (1-16 credits)

Credit arranged.

Water Resources (WR)

WR 500 Master's Research & Thesis (1-16 credits)

Credit arranged

WR 501 (s) Seminar (1-16 credits)

Credit arranged

WR 502 (s) Directed Study (1-16 credits)

Credit arranged

WR 503 (s) Workshop (1-16 credits)

Credit arranged

WR 504 (s) Special Topics (1-16 credits)

Credit arranged

WR 505 (s) Professional Development (1-16 credits)

Credit arranged

WR 506 Interdisciplinary Methods in Water Resources (2 credits)

Student and faculty teams from traditionally disparate disciplines address real issues to develop methods for communicating across disciplines and for solving water resources problems. The course takes a problem-oriented approach using case studies. Faculty will lead students through this integrative process with lectures and working sessions. (Fall only)

WR 507 Integrated Water Resources Projects (3 credits)

In a seminar style format, students present and discuss disciplinary and interdisciplinary aspects of thesis/dissertation research, and finish writing of interdisciplinary aspects of their thesis/dissertation. (Spring only)

Prereqs: WR 506

WR 544 Water Quality in the Pacific Northwest (3 credits)

Cross-listed with ENVS 544

Joint-listed with ENVS 444, SOIL 444

Qualitative aspects of water are covered in this class. Major topics are qualitative aspects of (1) surface water, (2) groundwater, (3) drinking water, (4) water in the oceans, and (5) the human waste stream. Concepts presented are relevant to world-wide water quality issues and concepts; however, an emphasis is placed on issues within the four Pacific Northwest states (ID, AK, OR, WA). Typically Offered: Fall.

WR 552 Water Economics and Policy Analysis (3 credits)

Joint-listed with AGECE 452

This course will provide students with an in-depth look at the role of economics in water resource planning. Topics will include an introduction to water law, common concepts in hydrology, and the tools necessary to evaluate irrigation and other water use decisions. The course will focus on economic theory and a practical background of water resource management, as such, significant time will be spent developing the tools most frequently utilized by water resource economists. This includes Linear Programming, Cost/Benefit Analysis, Residual Imputation methods, Regression Analysis, Input-Output Modeling, Survey Design and Implementation, and Cost of Avoidance Techniques. Additional work required for graduate credit. Typically Offered: Spring. Cooperative: open to WSU degree-seeking students.

WR 598 (s) Internship (1-16 credits)

Credit arranged

WR 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged

WR 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

WR 601 (s) Seminar (1-16 credits)

Credit arranged

WR 604 (s) Special Topics (1-16 credits)

Credit arranged

Wildlife Resources (WLF)

WLF 102 The Fish and Wildlife Professions (1 credit)

Cross-listed with FISH 102

Orientation of students to the profession of fishery resources and wildlife resources: introduction to fish and wildlife faculty, review of fish and wildlife curriculum, awareness of career opportunities, employment procedures, associated job duties/responsibilities, job preparation, educational preparation, and management challenges in the Pacific Northwest. (Fall only)

WLF 105 Hunter Education (1 credit)

The course provides an overview of hunter ethics; wildlife management, conservation, and survival; and wildlife laws and law enforcement.

This course also fulfills the state requirement for hunter education for purchase of a hunting license. Course includes in-class instruction and one outdoor field day. Graded P/F.

WLF 200 (s) Seminar (1-16 credits)

Credit arranged

WLF 201 Fish and Wildlife Applications (2 credits)

This course will introduce students to research and monitoring methods; data analysis and report writing in fish and wildlife sciences; potential state, federal and tribal employers; and management challenges for fish and wildlife populations and habitats. The course will include an off campus experiential learning field trip and activities with professional mentors.

Prereqs: NR 101 or Permission

WLF 203 (s) Workshop (1-16 credits)

Credit arranged

WLF 204 (s) Special Topics (1-16 credits)

Credit arranged

WLF 205 Wildlife Law Enforcement (2 credits)

This course will provide students with an introduction to the history of wildlife laws and the role of a Conservation Officer. It will also provide students with a better understanding of wildlife crimes and the impact they have on fish and wildlife. This course is designed for students seeking a career in wildlife law enforcement as well as those pursuing a career in wildlife/fisheries/habitat management.

WLF 220 Principles of Ecology (3 credits)

Cross-listed with FOR 221, REM 221

Principles of ecology and their relevance to management of natural resources. Major topics include plant and wildlife population, community, ecosystem, and landscape level processes and how these processes interact with the environment. Exploration of how ecosystems are affected by humans and global change. Introduction to the types of questions asked by ecologists, the principal concepts and theories that guide ecological inquiry, and the methods that are used to answer ecological questions. Both terrestrial and aquatic systems are considered. Typically Offered: Spring.

Prereqs: BIOL 102/BIOL 102L or BIOL 114 or BIOL 115 or PLSC 205; or Permission.

WLF 299 (s) Directed Study (1-16 credits)

Credit arranged

WLF 314 Ecology of Terrestrial Vertebrates (3 credits)

Ecology and natural history of birds, mammals, reptiles, and amphibians. Typically Offered: Fall.

Prereqs: FOR 221, REM 221, WLF 220 or BIOL 314

WLF 315 Techniques Laboratory (2 credits)

Techniques associated with wildlife research and local habitats and areas where wildlife species are present. Three hours of lab per week. One weekend field trip required. Two additional animal trapping sessions also required. (Fall only)

Prereqs or Coreqs: WLF 314

WLF 370 Management and Communication of Scientific Data (3 credits)

Students will learn skills to analyze, manage, and present scientific data in the fish and wildlife field. Analyses will be conducted in R, spreadsheets, and basic data management software. Data summaries will include graphical and tabular presentation. Written presentation of scientific information will include organization, grammar, and citation formats appropriate for scientific reports.

WLF 371 Physiological Ecology of Wildlife (2 credits)

Study of how biotic and abiotic components of the environment influence animal physiology, and how the physiology of animals influences their ecology (e. g. , behavior, distribution, etc.). Major topics include energetics, thermal ecology, nutritional ecology, reproductive physiology, locomotion and movement, and adaptations to extreme environments. (Spring only)

Prereqs: BIOL 213

WLF 398 (s) Renewable Natural Resources Internship (1-16 credits)

Credit arranged Supervised field experience with an appropriate public or private agency. Required for cooperative education students. Graded P/F.

Prereqs: Department Permission

WLF 400 (s) Seminar (1-16 credits)

Credit arranged

Prereqs: Permission

WLF 403 (s) Workshop (1-16 credits)

Credit arranged

WLF 404 (s) Special Topics (1-16 credits)

Credit arranged

WLF 411 Wildland Habitat Ecology and Assessment (2 credits)

Cross-listed with REM 411

Joint-listed with REM 511, WLF 511

This course integrates theoretical concepts with field sampling related to scientific research, wildlife habitat, and land management practices. Students collect, analyze, and report on ecological data in various formats, and learn specific protocols used by professionals to assess wildlife habitat. Class field trips are required for on-campus students, and alternative field assignments will be required for remote, online students. Additional assignments required for graduate credit. Recommended preparation: REM 252 and REM 253, REM 341, or other plant identification class; introductory statistics course; ability to use excel. Co-enrollment in REM 410 is recommended. Typically Offered: Varies.

WLF 412 Wildlife Tracks and Sign I (1 credit)

Joint-listed with WLF 512

Students will learn to identify wildlife signs and tracks. This course is intended for ecologists, naturalists, and others who wish to have a deeper understanding of the behavior of terrestrial animals in terms of the habitats they frequent, what and where they feed, den and bedding locations, and other activities. This course includes an introduction to animal sign and tracking and focuses on tracking canids, felids and ungulates. Additional work required for graduate credit. Typically Offered: Summer.

WLF 413 Wildlife Tracks and Sign II (1 credit)

Joint-listed with WLF 513

Students will learn to identify wildlife signs and tracks. This course is intended for ecologists, naturalists, and others who wish to have a deeper understanding of the behavior of terrestrial animals in terms of the habitats they frequent, what and where they feed, den and bedding locations, and other activities. This course focuses on tracking bears, birds, reptiles, amphibians, and medium and small mammals not covered in Wildlife Tracks and Sign I. Additional work required for graduate credit. Typically Offered: Summer.

Prereqs: WLF 412

WLF 414 Wildlife Tracks and Sign III (1 credit)

Joint-listed with WLF 514

This course focuses on advanced wildlife tracking using scats, pellets and other animal sign. Students will also learn to age tracks and sign and evaluate animal gaits. Additional work required for graduate credit. Typically Offered: Summer.

Prereqs: WLF 412

WLF 418 Wildlife Monitoring (1 credit, max 5)

Experiential learning course that provides students with field skills for monitoring of wildlife. A multi-day field trip and extensive walking is expected. Graded Pass/Fail.

WLF 440 Conservation Biology (3 credits)

Patterns of biological diversity; factors producing changes in diversity; values of diversity; management principles applied to small populations, protected area and reserve design, landscape scale conservation, biotic integrity, restoration, and conservation law and policy. Typically Offered: Fall and Summer.

Prereqs: FOR 221, REM 221, WLF 220, or BIOL 314 or Permission

WLF 448 Fish and Wildlife Population Ecology (4 credits)

Dynamics of animal populations resulting from balance between birth, death, and movement processes; quantitative methods for measuring distribution, abundance, survival and population growth; competition, predation, and self-regulation; viability and management of fish and wildlife populations. Three lectures and one lab per week. One weekend field trip required. Typically Offered: Spring.

Prereqs: STAT 251; and MATH 143, MATH 160 or MATH 170

WLF 473 ECB Senior Presentation (1 credit)

General Education: Senior Experience

Cross-listed with FISH 473, FOR 473

, FSP 473, NRS 473, REM 473. Reporting and presenting the senior project (thesis or internship); taken after or concurrently with REM 497. Serves as the senior capstone course for Ecology and Conservation Biology (ECB).

Prereqs: Instructor Permission

WLF 482 Ornithology (4 credits)

Evolution, systematics, distribution, identification, and biology of birds, including current conservation efforts. Two days of field trips required. (Spring only)

Prereqs: BIOL 114 and BIOL 115

WLF 483 Senior Project Presentation (1 credit)

Cross-listed with FISH 483

Reporting and presenting the senior project (thesis or internship); taken after or concurrently with WLF 485 or WLF 497.

WLF 485 Ecology and Conservation Biology Senior Project (1-3 credits, max 3)

Cross-listed with FOR 485 and NRS 485

Scholarly work; learning objectives include development and formal proposal of a specific project and conducting the project or research with the guidance of a faculty mentor.

WLF 492 Wildlife Management (4 credits)

General Education: Senior Experience

Review of social and biological context for current practice of wildlife management including a hands on wildlife management project. Three lectures and one lab per week; two days of field trips. (Spring only)

Prereqs: WLF 314, Senior standing Prereqs or

Coreqs: WLF 448

WLF 497 Senior Thesis (1-3 credits, max 6)

Preparation of thesis, exhibition, video, computer program, multimedia program, or other creative presentation based on research conducted under the guidance of a faculty mentor.

Prereqs: Cumulative GPA of at least 3. 2 in all college courses, completion of at least 90 credits, and Permission of a faculty mentor.

WLF 499 (s) Directed Study (1-16 credits, max arranged)

Credit arranged. For the individual student; conferences, library, field, or lab work.

Prereqs: Senior standing, 2. 5 GPA, and Permission

WLF 500 Master's Research and Thesis (1-16 credits)

Credit arranged

WLF 501 (s) Seminar (1-16 credits, max arranged)

Credit arranged. Major philosophy, management, and research problems of wildlands; presentation of individual studies on assigned topics. Graded Pass/Fail.

Prereqs: Permission

WLF 502 (s) Directed Study (1-16 credits)

Credit arranged

WLF 503 (s) Workshop (1-16 credits)

Credit arranged. Selected topics in the conservation and management of wildlife.

WLF 504 (s) Special Topics (1-16 credits)

Credit arranged. New selected topics in the conservation and management of wildlife.

WLF 505 (s) Professional Development (1-16 credits)

Credit arranged

WLF 506 (s) External Speakers (1 credit, max 6)

Students will attend (or view recorded) seminars of fish and wildlife researchers and managers invited to present in our departmental seminar series. Students will read papers of external speakers, lead discussions of papers, and assist with hosting speakers. Graded P/F.

WLF 511 Wildland Habitat Ecology and Assessment (2 credits)

Cross-listed with REM 511

Joint-listed with REM 411, WLF 411

This course integrates theoretical concepts with field sampling related to scientific research, wildlife habitat, and land management practices. Students collect, analyze, and report on ecological data in various formats, and learn specific protocols used by professionals to assess wildlife habitat. Class field trips are required for on-campus students, and alternative field assignments will be required for remote, online students. Additional assignments required for graduate credit. Recommended preparation: REM 252 and REM 253, REM 341, or other plant identification class; introductory statistics course; ability to use excel. Co-enrollment in REM 410 is recommended. Typically Offered: Varies.

WLF 512 Wildlife Tracks and Sign I (1 credit)

Joint-listed with WLF 412

Students will learn to identify wildlife signs and tracks. This course is intended for ecologists, naturalists, and others who wish to have a deeper understanding of the behavior of terrestrial animals in terms of the habitats they frequent, what and where they feed, den and bedding locations, and other activities. This course includes an introduction to animal sign and tracking and focuses on tracking canids, felids and ungulates. Additional work required for graduate credit. Typically Offered: Summer.

WLF 513 Wildlife Tracks and Sign II (1 credit)

Joint-listed with WLF 413

Students will learn to identify wildlife signs and tracks. This course is intended for ecologists, naturalists, and others who wish to have a deeper understanding of the behavior of terrestrial animals in terms of the habitats they frequent, what and where they feed, den and bedding locations, and other activities. This course focuses on tracking bears, birds, reptiles, amphibians, and medium and small mammals not covered in Wildlife Tracks and Sign I. Additional work required for graduate credit. Typically Offered: Summer.

Prereqs: WLF 412

WLF 514 Wildlife Tracks and Sign III (1 credit)

Joint-listed with WLF 414

This course focuses on advanced wildlife tracking using scats, pellets and other animal sign. Students will also learn to age tracks and sign and evaluate animal gaits. Additional work required for graduate credit. Typically Offered: Summer.

Prereqs: WLF 412

WLF 516 Wildlife Genetics Lab Experience (1 credit)

Joint-listed with WLF 416

Hands on training in the basic procedures in molecular biology that have applications in wildlife ecology and conservation. Graduate students must complete an independent project. Typically offered: Fall.

WLF 521 Communicating Science Broadly (2 credits)

Communicating science in a clear, compelling way is critical for being an effective scientist. The purpose of this course is to master techniques that will help students communicate clearly and effectively to a diversity of audiences. This course will focus on developing oral and visually-rich products (e. g. , infographics, video shorts, research interviews, message boxes) that students can use to promote their research and science broadly. The course will focus on techniques for clear communication of science regardless of the medium used (e. g. , Twitter, vlog, etc.). Typically Offered: Varies. Cooperative: open to WSU degree-seeking students.

WLF 522 Community Ecology (2 credits)

Cross-listed with FISH 521

Introduction to literature and contemporary research into processes structuring ecological communities. Topics will encompass community-level patterns and processes in a range of ecological systems at local, regional, and global scales, including community impacts on ecosystem processes. Recommended preparation: Introductory level ecology courses.

WLF 530 Riparian Ecology (2 credits)

This course examines the ecology of streamside and floodplain systems from the perspective of habitat, landscape, and community ecology, conservation, and management. The course is structured as a combination of readings, discussions, lectures, and assignments. Recommended preparation: Introductory-level ecology courses.

WLF 540 Conservation Genetics (1-3 credits, max 3)

Basic principles of population genetics and phylogenetics and their applications to the field of conservation and natural resource management. Taught in three 1-credit modules, students can register for 1-3 credits. Module 1 includes introduction to conservation genetics and phylogenetics, module 2 includes population genetic theory and methods, and module 3 includes applications in conservation genetics and genomics. Cooperative: open to WSU degree-seeking students. (Spring, alt/years)

WLF 545 Wildlife Habitat Ecology (2-3 credits)

Reading and discussion on habitat concepts, analyses, and applications. Students enrolled in the 3rd credit will complete additional readings and quantitative problem sets. Cooperative: open to WSU degree-seeking students.

Prereqs: WLF 492 or Permission, animal and plant ecology

WLF 550 Quantitative Analysis of Fish and Wildlife Populations (2 credits)

Contemporary mathematical and statistical models central to fish and wildlife research and management, including capture-recapture, occupancy, resource selection, movement, population, growth, and hierarchical models. Typically Offered: Fall (Odd Years).

Prereqs: MATH 160 or equivalent, STAT 431 Cooperative: open to WSU degree-seeking students.

WLF 551 Applied Mixed Effects Modeling (2 credits)

Analysis of complex ecological data with mixed effects models and their various extensions. After a brief review of generalized linear modeling, students will gain practical experience in the use of linear and generalized linear modeling, students will gain practical experience in the use of linear and generalized linear mixed models to analyze hierarchical datasets (continuous, count, binary, etc.) that include inherent serial or spatial autocorrelation. Cooperative: open to WSU degree-seeking students. (Fall, alt/years)

Prereqs: STAT 431

WLF 552 Ecological Modeling (3 credits)

Theory and practice of modeling individuals, populations, and communities in heterogenous environments. Construction of spatially-explicit and aspatial models of individual behavior, fitness, population regulation, metapopulation dynamics, and species interactions. Analysis of stability, population viability, harvest, and conservation interventions. Computer-intensive use of R and MATLAB for simulation and parameter estimation. In consultation with instructor, each student will independently develop a novel model of their research system.

Typically Offered: Fall (Odd Years).

Prereqs: STAT 431 and MATH 160 or permission Cooperative: open to WSU degree-seeking students.

WLF 555 Statistical Ecology (3 credits)

Cross-listed with STAT 555

Stochastic models in ecological work; discrete and continuous statistical distributions, birth-death processes, diffusion processes; applications in population dynamics, population genetics, ecological sampling, spatial analysis, and conservation biology. Cooperative: open to WSU degree-seeking students. (Spring, alt/years)

Prereqs: MATH 451 or Permission

WLF 561 Landscape Genetics (2 credits)

Landscape genetics is an interdisciplinary field of study that evaluates how landscape and environmental features influence gene flow, population structure and local adaptation by integrating landscape ecology, population genetics, and spatial statistics. This course covers applications of landscape genetics that can improve our understanding of ecology, evolution, and management of wild populations. Recommended Preparation: Population genetics or conservation genetics, and multivariate or spatial statistics. Cooperative: open to WSU degree-seeking students. (Spring, alt/even years)

WLF 562 Landscape Genetics Lab (1-2 credits)

This optional lab course is a complement to WLF 561 Landscape genetics and should be taken concurrently. Students will learn to analyze and interpret landscape genetic datasets using a variety of methods. If taken for two credits, students will do a project analyzing landscape genetic data. Recommended Preparation: Population genetics or conservation genetics, and multivariate or spatial statistics. Cooperative: open to WSU degree-seeking students. (Spring, alt/even years)

Coreqs: WLF 561

WLF 575 Behavioral Ecology (2 credits)

Behavioral Ecology is the study of evolutionary causes and fitness consequences of behavioral decisions by animals. This course will explore theoretical and empirical approaches to understanding behavioral ecology across a diversity of species, with an emphasis on vertebrates. The format will include short lectures and facilitated discussions of primary literature. The course is open to graduate students and seniors with instructor permission. Cooperative: open to WSU degree-seeking students.

WLF 598 (s) Internship (1-16 credits)

Credit arranged

WLF 599 (s) Non-thesis Master's Research (1-16 credits)

Credit arranged. Research not directly related to a thesis or dissertation.

Prereqs: Permission

WLF 600 Doctoral Research and Dissertation (1-45 credits)

Credit arranged

Prereqs: Admission to the doctoral program in Natural Resources and Department Permission

Women's, Gender, and Sexuality Studies (WGSS)

WGSS 201 Introduction to Women's, Gender, and Sexuality Studies (3 credits)

General Education: American Diversity

Survey of and introduction to the study of women's lives and the social construction of gender and sexuality across times and cultures. Thematic examination of the diversity of women's experiences in families, at work, with the law, in health care, in literature, in the media, in language; exploration of differences and similarities, including ethnicity, sexuality, class, and age. Examination of ideals of femininity and masculinity in the US and elsewhere.

WGSS 367 (s) Topics in Women's, Gender, and Sexuality Studies (3 credits, max arranged)

Topical examination of issues in women's, gender and sexuality studies.

WGSS 404 (s) Special Topics (1-16 credits)

Credit arranged

WGSS 410 Feminist Theory and Action (3 credits)

This course examines a range of feminist theory, including both classic and lesser-known texts, while grounding the study of theory in an examination of historical and contemporary feminist activism. The course covers some of the key concepts and debates within feminism and explores the relationship between theory and action. Students learn how to read theory and apply their knowledge to current events, issues, and problems in the United States and globally.

WGSS 495 (s) Women's Center Internship (1-6 credits, max 6)

Directed student internship relevant to women's, gender, and sexuality studies, and done in conjunction with the Women's Center. Various credits depending on the length and type of internship. Typically Offered: Varies.

Prereqs: Permission of the director of the Women's Center

WGSS 498 (s) Internship in Women's, Gender, and Sexuality Studies (1-6 credits, max arranged)

Directed student internship in approved setting relevant to women's, gender, and sexuality studies with campus, local, national, or international organizations or offices. Various credits depending on the length and type of internship.

Prereqs: WGSS 201, Permission of the Coordinator of Women's, Gender, and Sexuality Studies.

WGSS 499 (s) Directed Study (1-16 credits)

Credit arranged

WGSS 502 (s) Directed Study (1-16 credits)

Credit arranged

WASHINGTON STATE UNIVERSITY COOPERATIVELY OFFERED COURSES

2023-2024 WSU Cooperative Courses Open to U of I students

Students may search for the cooperative courses that are offered for any particular semester by going to <http://schedules.wsu.edu/Coop/> and choosing the appropriate fall or spring semester.

Subject	Number	Course Title and Credits
AFS	590	Sociology of Agriculture and Food Systems (3 credits)
AGTM	305	Agricultural Precision Systems (3 credits)
AGTM	310	Small Engine Maintenance and Repair (3 credits)
AGTM	315	Irrigation Systems and Water Management (3 credits)
ANIM SCI	101	Introductory Animal Science (3 credits)
ANIM SCI	172	Dairy Cattle Management Laboratory (1 credit)
ANIM SCI	174	Beef Cow Calf Management Laboratory (1 credit)
ANIM SCI	178	Swine Management Laboratory (1 credit)
ANIM SCI	260	Live Animal and Carcass Evaluation (3 credits)
ANIM SCI	274	Beef Feedlot Systems (2 credits)
ANIM SCI	285	Rights and Welfare of Animals (3 credits)
ANIM SCI	313	Feeds and Feeding (4 credits)
ANIM SCI	314	Principles of Nutrition (3 credits)
ANIM SCI	330	Animal Genetics (3 credits)
ANIM SCI	345	Animal Growth and Development (3 credits)
ANIM SCI	346	Introduction to Skeletal Muscle Physiology (3 credits)
ANIM SCI	350	Physiology of Reproduction (3 credits)
ANIM SCI	351	Physiology of Reproduction Laboratory (1 credit)
ANIM SCI	360	Meat Science (3 credits)
ANIM SCI	405	Ciders and Other Fermented Foods (3 credits)
ANIM SCI	451	Endocrine Physiology (3 credits)
ANIM SCI	454	Artificial Insemination and Pregnancy Detection (2 credits)
ANIM SCI	460	Advanced Meat Science (3 credits)
ANIM SCI	464	Companion Animal Management (3 credits)
ANIM SCI	468	Applied Physiology of Cultured Fish (3 credits)
ANIM SCI	472	Dairy Cattle Management (3 credits)
ANIM SCI	473	Advanced Dairy Management (3 credits)
ANIM SCI	478	Swine Production (3 credits)
ANIM SCI	485	Applied Animal Behavior (3 credits)
ANIM SCI	488	Perspectives in Biotechnology (3 credits)
ANIM SCI	513	Mineral and Vitamin Metabolism (4 credits)
ANIM SCI	545	Statistical Genomics (3 credits)
ANIM SCI	551	Endocrine Physiology (3 credits)
ANIM SCI	558	Molecular and Cellular Reproduction (3 credits)
ANIM SCI	588	Perspectives in Biotechnology (3 credits)
ANIM SCI	598	Advanced Topics in Animal Sciences (1-2 credits)
ANTH	450	Descriptive Linguistics (3 credits)
ANTH	463	Introduction to Anthropological Demography and Epidemiology (3 credits)
ANTH	465	Human Evolution (3 credits)
ANTH	535	Cultural Resource Management (3 credits)
ANTH	550	Descriptive Linguistics (3 credits)
ANTH	563	Introduction to Anthropological Demography and Epidemiology (3 credits)
ANTH	565	Human Evolution (3 credits)
ANTH	573	Zooarchaeology (4 credits)
ARCH	490	Seminar in Architectural Design (1-4 credits)
ASIA	111	Asian Film (3 credits)
ASIA	121	Modern Chinese Culture (3 credits)
ASIA	131	Masterpieces of Asian Literature (3 credits)
ASIA	320	Issues in East Asian Ethics (3 credits)
ASIA	330	The Art of War (3 credits)
ASTRONOM	581	Advanced Topics in Astronomy (3 credits)
BIOLOGY	324	Comparative Vertebrate Anatomy (4 credits)
BIOLOGY	416	Fisheries Management (4 credits)
BIOLOGY	469	Ecosystem Ecology and Global Change (3 credits)
BIOLOGY	494	Seminar in Mathematical Biology (1 credit)
BIOLOGY	514	Fish Genetics (2 credits)
BIOLOGY	519	Introduction to Population Genetics (3 credits)
BIOLOGY	540	Stable Isotope Theory and Methods (3 credits)
BIOLOGY	545	Statistical Genomics (3 credits)

BIOLOGY	548	Evolutionary Ecology of Populations (3 credits)	CE	442	Water and Wastewater Treatment Design (3 credits)
BIOLOGY	563	Field Ecology (2 credits)	CE	450	Design and Simulation of Water Resource Systems (3 credits)
BIOLOGY	566	Mathematical Genetics (3 credits)	CE	451	Open Channel Flow (3 credits)
BIOLOGY	569	Ecosystem Ecology and Global Change (3 credits)	CE	460	Advanced Hydrology (3 credits)
BIOLOGY	579	Mathematical Modeling in the Biological and Health Sciences (3 credits)	CE	472	Durable and Sustainable Pavements and Bridges (3 credits)
BSYSE	551	Advanced Biological Systems Engineering Topics (1-4 credits)	CE	473	Pavement Design (3 credits)
BSYSE	552	Advanced Biological Systems Engineering Topics (1-4 credits)	CE	475	Groundwater (3 credits)
BSYSE	554	Aquatic System Restoration (3 credits)	CE	476	Pavement Evaluation and Rehabilitation (3 credits)
BSYSE	555	Natural Treatment Systems (3 credits)	CE	501	Advanced Topics in Transportation Engineering (2-4 credits)
BSYSE	560	Aquatic Chemistry (3 credits)	CE	502	Applied Meteorology (3 credits)
BSYSE	582	Food Process Engineering I (3 credits)	CE	503	Air Quality Management (3 credits)
BSYSE	596	Biomass Thermo-Chemical Conversion (3 credits)	CE	504	Sustainability Engineering I (3 credits)
CE	211	Statics (3 credits)	CE	505	Decision-Making for Sustainable and Resilient Civil Infrastructure (3 credits)
CE	215	Mechanics of Materials (3 credits)	CE	506	Theory and Measurement of Turbulent Fluxes (3 credits)
CE	322	Transportation Engineering (3 credits)	CE	507	Sustainability: Life Cycle Assessment (3 credits)
CE	351	Water Resources Engineering (3 credits)	CE	508	Concrete Durability (3 credits)
CE	400	Highway Materials Engineering (3 credits)	CE	509	Numerical Modeling of Geomaterials (3 credits)
CE	401	Climate Change Science and Engineering (3 credits)	CE	510	Advanced Geomaterial Characterization (3 credits)
CE	402	Applied Meteorology (3 credits)	CE	511	Advanced Topics in Geotechnical Engineering (2-4 credits)
CE	403	Air Quality Management (3 credits)	CE	512	Dynamics of Structures (3 credits)
CE	405	Decision-Making for Sustainable and Resilient Civil Infrastructure (3 credits)	CE	514	Advanced Mechanics of Materials (3 credits)
CE	414	Structural Design Loads and Load Paths (3 credits)	CE	515	Environmental Measures (3 credits)
CE	415	Environmental Measures (3 credits)	CE	517	Mechanics of Sediment Transport (3 credits)
CE	416	Hydraulic Engineering Laboratory (3 credits)	CE	518	Hazardous Containment Pathway Analysis (3-4 credits)
CE	418	Hazardous Containment Pathway Analysis (V 3-4 credits)	CE	519	Hazardous Waste Treatment (3 credits)
CE	419	Hazardous Waste Treatment (3 credits)	CE	524	Geotechnical Earthquake Engineering (3 credits)
CE	425	Soil and Site Improvement (3 credits)	CE	525	Soil and Site Improvement (3 credits)
CE	430	Analysis of Indeterminate Structures (3 credits)	CE	527	Engineering Properties of Soils (3 credits)
CE	431	Structural Steel Design (3 credits)	CE	530	Advanced Design of Steel Structures (3 credits)
CE	433	Reinforced Concrete Design (3 credits)	CE	531	Probability and Statistical Models in Engineering (3 credits)
CE	434	Masonry Design (3 credits)	CE	532	Finite Elements (3 credits)
CE	435	Foundations (3 credits)			
CE	436	Design of Timber Structures (3 credits)			

770 Washington State University Cooperatively Offered Courses

CE	533	Advanced Reinforced Concrete Design (3 credits)	CE	596	Engineered Wood Composites (3 credits)
CE	534	Prestressed Concrete and Bridge Design (3 credits)	CE	597	Polymers and Surfaces for Adhesion (3 credits)
CE	535	Advanced Finite Elements (3 credits)	CE	598	Natural Fiber Polymer Composites (3 credits)
CE	537	Advanced Topics in Structural Engineering (3 credits)	CHE	510	Transport Processes (3 credits)
CE	538	Earthquake Engineering (3 credits)	CHE	527	Macroscopic Thermodynamics (3 credits)
CE	539	Advanced Design of Timber Structures (3 credits)	CHE	529	Chemical Engineering Kinetics (3 credits)
CE	540	Instrumental Analysis of Environmental Contaminants (3 credits)	CHE	541	Chemical Engineering Analysis (3 credits)
CE	541	Physicochemical Water and Wastewater Treatment (3 credits)	CHE	560	Biochemical Engineering (3 credits)
CE	542	Biochemical Wastewater Treatment (3 credits)	CHEM	503	Advanced Topics in Inorganic Chemistry (1-3 credits)
CE	543	Advanced Topics in Environmental Engineering Practice (1-4 credits)	CHEM	532	Advanced Physical Chemistry II (3 credits)
CE	550	Hydroclimatology (3 credits)	CHEM	537	Advanced Topics in Physical Chemistry (1-3 credits)
CE	551	Open Channel Flow (3 credits)	CHEM	542	Advanced Organic Chemistry (3 credits)
CE	552	Advanced Topics in Hydraulic Engineering (1-3 credits)	CHEM	544	Advanced Topics in Organic Chemistry (1-3 credits)
CE	555	Natural Treatment Systems (3 credits)	CHEM	545	Synthetic Organic Chemistry (3 credits)
CE	560	Advanced Hydrology (3 credits)	CHINESE	101	First Semester (4 credits)
CE	562	Advanced Subsurface Flow and Transport (3 credits)	CHINESE	102	Second Semester (4 credits)
CE	564	Numerical Methods (3 credits)	CHINESE	111	Asian Film (3 credits)
CE	567	Properties of Highway Pavement Materials (3 credits)	CHINESE	121	Modern Chinese Culture (3 credits)
CE	572	Advanced Pavement Design and Analysis (3 credits)	CHINESE	131	Masterpieces of Asian Literature (3 credits)
CE	583	Aquatic Chemistry (3 credits)	CHINESE	203	Third Semester (4 credits)
CE	584	Environmental Microbiology (3 credits)	CHINESE	204	Fourth Semester (4 credits)
CE	585	Aquatic System Restoration (3 credits)	CHINESE	305	Intermediate Conversation II (1 credit)
CE	586	Bioremediation of Hazardous Waste (3 credits)	CHINESE	306	Intermediate Reading and Translation (3 credits)
CE	588	Atmospheric Turbulence and Air Pollution Modeling (3 credits)	CHINESE	308	Intermediate Grammar and Writing (3 credits)
CE	589	Atmospheric Chemical and Physical Processes (3 credits)	CHINESE	320	Issues in East Asian Ethics (3 credits)
CE	590	Spectroscopy and Radiative Transfer of the Atmosphere (3 credits)	CHINESE	330	The Art of War (3 credits)
CE	591	Aerosol Dynamics and Chemistry (3 credits)	CHINESE	361	Advanced Chinese for the Professions (3 credits)
CE	593	Polymer Materials and Engineering (3 credits)	CHINESE	363	Introduction to Literary Chinese (3 credits)
CE	594	Natural Fibers (3 credits)	CHINESE	364	Media Chinese (3 credits)
CE	595	Polymer and Composite Processing (3 credits)	CHINESE	405	Advanced Conversation (1 credit)
			CHINESE	450	Seminar in Chinese Studies - Themes (3 credits)
			COUN PSY	511	Theories, Research, and Techniques in Counseling Psychology I (3 credits)
			COUN PSY	512	Theories, Research, and Techniques in Counseling Psychology II (3 credits)

COUN PSY	515	Ethics and Professional Problems in Counseling Psychology (3 credits)	CROP SCI	360	World Agricultural Systems (3 credits)
COUN PSY	518	Theoretical Foundations of Group Counseling (3 credits)	CROP SCI	401	Turfgrass Science (3 credits)
COUN PSY	541	Clinical and Experimental Hypnosis Seminar (3 credits)	CROP SCI	403	Advanced Cropping Systems (3 credits)
CPT S	442	Computer Graphics (3 credits)	CROP SCI	445	Plant Breeding (4 credits)
CPT S	464	Distributed Systems Concepts and Programming (3 credits)	CROP SCI	503	Advanced Cropping Systems (3 credits)
CPT S	466	Embedded Systems (3 credits)	CROP SCI	504	Plant Transmission Genetics (3 credits)
CPT S	531	Advanced Matrix Computations (3 credits)	CROP SCI	505	Advanced Classical and Molecular Breeding (3 credits)
CPT S	542	Computer Graphics (3 credits)	CROP SCI	545	Statistical Genomics (3 credits)
CPT S	564	Distributed Systems Concepts and Programming (3 credits)	CROP SCI	555	Epigenetics in Plants (2 credits)
CPT S	566	Embedded Systems (3 credits)	E E	451	Digital Communication Systems (3 credits)
CRM J	101	Introduction to the Administration of Criminal Justice (3 credits)	E E	486	Power Electronics (3 credits)
CRM J	270	Introduction to Policing (3 credits)	E E	501	Linear System Theory (3 credits)
CRM J	280	Introduction to American Criminal Courts (3 credits)	E E	502	Linear Multivariable Control (3 credits)
CRM J	320	Criminal Law (3 credits)	E E	504	Modern Optics (3 credits)
CRM J	330	Crime Control Policies (3 credits)	E E	505	Nonlinear System Theory (3 credits)
CRM J	365	Juvenile Justice and Corrections (3 credits)	E E	507	Random Processes in Engineering (3 credits)
CRM J	370	Policing and Society (3 credits)	E E	508	Estimation Theory for Signal Processing, Communications, and Control (3 credits)
CRM J	400	Special Topics in Criminal Justice and Criminology (3 credits)	E E	511	Protection of Power Systems II (3 credits)
CRM J	405	Comparative Criminal Justice Systems (3 credits)	E E	518	Advanced Electromagnetic Theory I (3 credits)
CRM J	420	Criminal Procedure (3 credits)	E E	527	Antenna Theory and Design (3 credits)
CRM J	424	Community Corrections (3 credits)	E E	530	Digital Signal Processing II (3 credits)
CRM J	491	Special Topics: Study Abroad (3 credits)	E E	551	Data Communication Systems (3 credits)
CRM J	505	Comparative Criminal Justice (3 credits)	E E	581	Advanced Topics in Power Systems (2-3 credits)
CRM J	530	Criminal Justice: Process and Institutions (3 credits)	E E	582	Advanced Topics (1-3 credits)
CRM J	540	Seminar in Evaluation Research (3 credits)	E MIC	586	Special Projects in Electron Microscopy (2-3 credits)
CRM J	541	Seminar in Corrections (3 credits)	E MIC	587	Special Topics in Electron Microscopy (1 credit)
CRM J	570	The Police and Society (3 credits)	ECONS	324	The Economics of Health Care (3 credits)
CRM J	572	Seminar in Comparative Policing (3 credits)	ECONS	424	Strategy and Game Theory (3 credits)
CRM J	591	Seminar in the Administration of Criminal Justice (3 credits)	ECONS	523	Big Data Management and Processing for Economics (3 credits)
CROP SCI	301	Turfgrass Management (3 credits)	ECONS	524	Applied Machine Learning for Economics (3 credits)
			ECONS	525	Master's Econometrics (3 credits)
			ECONS	526	Master's Microeconomic Analysis I (3 credits)
			ECONS	527	Master's Microeconomic Analysis II (3 credits)
			ECONS	528	Master's Macroeconomics Analysis (3 credits)

ECONS	529	Research Methods (1-2 credits)	FS	407	Evaluation of Dairy Products Lab (1 credit)
ECONS	533	International Trade and Policy (3 credits)	FS	409	Principles of Environmental Toxicology (3 credits)
ECONS	534	Production Economics (3 credits)	FS	416	Food Microbiology (3 credits)
ECONS	701	Master's Independent Capstone Project and/or Examination (1-6 credits)	FS	417	Food Microbiology Laboratory (2 credits)
ED AD	580	School Organization and Administration (3 credits)	FS	418	Oral Seminar in Food Science (1 credit)
ED AD	585	Financial Management in Education (3 credits)	FS	422	Sensory Evaluation of Food and Wine (3 credits)
ED PSYCH	508	Educational Statistics (3 credits)	FS	423	Sensory Evaluation of Food and Wine Lab (1 credit)
ENGLISH	443	Phonology (3 credits)	FS	429	Dairy Products (3 credits)
ENGLISH	543	Phonology (3 credits)	FS	430	Dairy Processing Lab (1 credit)
ENGLISH	546	Topics in Teaching English as a Second Language (3 credits)	FS	432	Food Engineering (3 credits)
ENGLISH	580	Seminar in Medieval Literature (3 credits)	FS	433	Food Engineering Lab (1 credit)
ENTOM	150	Insects, Science, and World Cultures (3 credits)	FS	436	Principles of Sustainability (3 credits)
ENTOM	361	Honey Bee Biology (3 credits)	FS	460	Food Chemistry (3 credits)
ENTOM	401	Biology and Society, Past and Present (3 credits)	FS	461	Food Chemistry Laboratory (1 credit)
ENTOM	490	Special Topics in Entomology (1-4 credits)	FS	462	Food Analysis (3 credits)
ENTOM	539	Insect Identification (4 credits)	FS	464	Food Toxicology (3 credits)
ENTOM	590	Special Topics in Entomology (1-4 credits)	FS	465	Wine Microbiology and Processing (3 credits)
FINE ART	381	Beginning Photography (3 credits)	FS	466	Wine Microbiology and Processing Laboratory (1 credit)
FINE ART	382	Intermediate Photography (3 credits)	FS	470	Advanced Food Technology (3 credits)
FINE ART	555	Critical Practices (9 credits)	FS	475	Statistical Quality Management of Food Products (3 credits)
FRENCH	410	French Film in Translation (3 credits)	FS	489	Food Product Development (3 credits)
FS	110	Introduction to Food Science (3 credits)	FS	495	Internship in Food Science (2 credits)
FS	201	Science on Your Plate (3 credits)	FS	496	Internship in a Winery (2 credits)
FS	220	Food Safety and Quality (3 credits)	FS	499	Special Problems (1-4 credits)
FS	301	Food Mycology (3 credits)	FS	501	Topics in Food Science (1-3 credits)
FS	302	Food Processing Lab (1 credit)	FS	509	Principles of Environmental Toxicology (3 credits)
FS	303	Food Processing (3 credits)	FS	510	Functional Foods and Health (3 credits)
FS	304	Cereal Chemistry and Processing (3 credits)	FS	511	Food Lipids (3 credits)
FS	329	Dairy Foods Composition and Quality (4 credits)	FS	512	Food Proteins and Enzymes (2 credits)
FS	350	Instrumental and Sensory Analysis of Food (3 credits)	FS	513	Food Carbohydrates (3 credits)
FS	401	Topics in Food Science (1-3 credits)	FS	514	Starch Chemistry (3 credits)
FS	402	Industrial Fermentations (3 credits)	FS	515	Food Fermentations - Microbiology and Technology (3 credits)
FS	405	Ciders and Other Fermented Foods (3 credits)	FS	516	Food Laws (2 credits)
FS	406	Evaluation of Dairy Products I (1 credit)	FS	517	Scientific Writing (2 credits)

FS	518	Seminar Oral (1 credit)	HORT	313	Viticulture (3 credits)
FS	522	Sensory Evaluation of Food and Wine (3 credits)	HORT	320	Olericulture (3 credits)
FS	529	Dairy Products (3 credits)	HORT	321	Olericulture Laboratory (1 credit)
FS	530	Dairy Processing Lab (1 credit)	HORT	332	Interior Landscaping (3 credits)
FS	531	Advanced Food Safety and Quality (3 credits)	HORT	357	Greenhouse Management and Crop Production (3 credits)
FS	532	Advanced Food Microbiology (3 credits)	HORT	358	Greenhouse Management and Crop Production Lab (1 credit)
FS	536	Principles of Sustainability (3 credits)	HORT	403	Special Topics (1-4 credits)
FS	538	Physical Properties of Foods (2 credits)	HORT	413	Advanced Viticulture (3 credits)
FS	564	Food Toxicology (3 credits)	HORT	416	Advanced Horticultural Crop Physiology (3 credits)
FS	565	Wine Microbiology and Processing (3 credits)	HORT	418	Post-harvest Biology and Technology (3 credits)
FS	570	Advanced Food Technology (3 credits)	HORT	445	Plant Breeding (4 credits)
FS	583	Advances in Cereal Sciences and Technology (2 credits)	HORT	513	Advanced Viticulture (3 credits)
FOR LANG	100	Studies in Foreign Languages I (1-4 credits)	HORT	516	Advanced Horticultural Crop Physiology (3 credits)
FOR LANG	200	Studies in Foreign Languages II (1-4 credits)	HORT	518	Post-harvest Biology and Technology (3 credits)
FOR LANG	300	Studies in Foreign Languages (1-4 credits)	HORT	545	Statistical Genomics (3 credits)
FOR LANG	450	Descriptive Linguistics (3 credits)	HUMANITY	131	Masterpieces of Asian Literature (3 credits)
FRENCH	310	French and Francophone Film (3 credits)	HUMANITY	320	Issues in East Asian Ethics (3 credits)
GERMAN	308	Intermediate Grammar and Writing (3 credits)	ITALIAN	101	First Semester (4 credits)
GERMAN	320	German Culture (3 credits)	ITALIAN	102	Second Semester (4 credits)
GERMAN	450	Seminar in German Studies - Themes (3 credits)	ITALIAN	105	Elementary Conversation (1 credit)
GERMAN	451	Seminar in German Studies - Authors (3 credits)	ITALIAN	205	Intermediate Conversation (1 credit)
H D	514	Research Methods in Human Development II (3 credits)	JAPANESE	320	Issues in East Asian Ethics (3 credits)
H D	580	Families, Community and Public Policy (3 credits)	LND ARCH	480	Professional Practice (2 credits)
HBM	131	Introduction to Hospitality Business Management (3 credits)	LND ARCH	520	The Northern Rocky Mountain Regional Landscape (4 credits)
HBM	235	Travel, Society and Business (3 credits)	LND ARCH	521	Cultural Interpretation of the Regional Landscape (4 credits)
HBM	381	Hospitality Leadership and Organizational Behavior (3 credits)	MATH	416	Numerical Simulations for Probabilistic Models (3 credits)
HISTORY	308	North American Indian History, Precontact to Present (3 credits)	MATH	431	Intersections of Culture and Mathematics (3 credits)
HISTORY	395	Topics in History (3 credits)	MATH	440	Applied Mathematics I: PDEs (3 credits)
HISTORY	427	Public History: Theory and Methodology (3 credits)	MATH	441	Applied Mathematics II: Complex Variables (3 credits)
HISTORY	525	Seminar in American History (3 credits)	MATH	453	Graph Theory (3 credits)
HISTORY	527	Public History: Theory and Methodology (3 credits)	MATH	466	Optimization in Networks (3 credits)
HISTORY	569	Field Course in Modern European History (3 credits)			
HORT	310	Pomology (3 credits)			

MATH	486	Mathematical Methods in Natural Sciences (3 credits)	MATH	568	Statistical Theory I (3 credits)
MATH	494	Seminar in Mathematical Biology (1 credit)	MATH	569	Statistical Theory II (3 credits)
MATH	503	Complex Analysis (3 credits)	MATH	570	Continuum Mechanics (3 credits)
MATH	504	Measure and Integration (3 credits)	MATH	571	Mathematical Foundations of Continuum Mechanics II (3 credits)
MATH	505	Abstract Algebra (3 credits)	MATH	574	Topics in Optimization (3 credits)
MATH	507	Advanced Theory of Numbers (3 credits)	MATH	575	Asset Pricing in Financial Engineering (3 credits)
MATH	508	Advanced Mathematical Methods for Physics and Engineering (3 credits)	MATH	576	Quantitative Risk Management (3 credits)
MATH	511	Advanced Linear Algebra (3 credits)	MATH	579	Mathematical Modeling in the Biological and Health Sciences (3 credits)
MATH	512	Ordinary Differential Equations (3 credits)	MATH	581	Topics in Mathematics (V 1-3 credits)
MATH	516	Numerical Simulations for Probabilistic Models (3 credits)	MATH	583	Topics in Applied Mathematics (1-3 credits)
MATH	525	General Topology (3 credits)	MATH	585	Topics in Mathematical Biology (1-3 credits)
MATH	531	Intersections of Culture and Mathematics (3 credits)	MATH	586	Mathematical Methods in Natural Sciences (3 credits)
MATH	532	Advanced Mathematical Thinking (3 credits)	MATSE	505	Advanced Materials Science (3 credits)
MATH	534	Theories of Learning in Mathematics (3 credits)	MATSE	513	Theory of Plasticity and its Physical Foundations (3 credits)
MATH	535	Research Paradigms in Mathematics Education (3 credits)	MATSE	516	Phase Transformations (3 credits)
MATH	536	Statistical Computing (3 credits)	MATSE	521	Statistics of Microstructures (3 credits)
MATH	540	Applied Mathematics I: PDEs (3 credits)	MBIOS	303	Introductory Biochemistry (4 credits)
MATH	541	Applied Mathematics II: Complex Variables (3 credits)	MBIOS	440	Immunology (3 credits)
MATH	543	Stable Numerical Methods Using Orthogonality (3 credits)	MBIOS	442	General Virology (3 credits)
MATH	544	Advanced Matrix Computations (3 credits)	MBIOS	446	Epidemiology (3 credits)
MATH	545	Numerical Analysis of Parabolic and Hyperbolic PDEs (3 credits)	MBIOS	528	Molecular and Cellular Reproduction (3 credits)
MATH	546	Numerical Analysis of Elliptic PDEs (3 credits)	MBIOS	540	Immunology (3 credits)
MATH	553	Graph Theory (3 credits)	MBIOS	542	General Virology (3 credits)
MATH	555	Topics in Combinatorics (3 credits)	MBIOS	548	Selected Topics in Immunology and Virology (1 credit)
MATH	560	Partial Differential Equations I (3 credits)	MBIOS	582	Seminar in Reproductive Biology (1 credit)
MATH	561	Partial Differential Equations II (3 credits)	ME	212	Dynamics (3 credits)
MATH	563	Mathematical Genetics (3 credits)	ME	301	Fundamentals of Thermodynamics (3 credits)
MATH	564	Convex and Nonlinear Optimization (3 credits)	ME	303	Fluid Mechanics (3 credits)
MATH	565	Nonsmooth Analysis and Optimization with Applications (3 credits)	ME	304	Heat Transfer (3 credits)
MATH	566	Optimization in Networks (3 credits)	ME	313	Engineering Analysis (3 credits)
MATH	567	Integer and Combinatorial Optimization (3 credits)	ME	419	Air Conditioning (3 credits)
			ME	449	Mechanical Vibration (3 credits)

ME	474	Design for Manufacture and Modern Manufacturing Strategies (3 credits)	MSE	508	Polymer Nanocomposites and Functionalities (3 credits)
ME	481	Control Systems (3 credits)	MSE	509	MEMS Engineering (3 credits)
ME	501	Continuum Mechanics (3 credits)	MSE	513	Theory of Plasticity and its Physical Foundations (3 credits)
ME	502	Sustainability Assessment for Engineering Design (3 credits)	MSE	514	Thermodynamics of Solids (3 credits)
ME	503	Systems Design Approaches for Sustainability (3 credits)	MSE	515	Electronic Properties of Materials (3 credits)
ME	507	Additive Manufacturing (3 credits)	MSE	516	Phase Transformations (3 credits)
ME	509	MEMS Engineering (3 credits)	MSE	517	Thin Films (3 credits)
ME	513	Theory of Plasticity and its Physical Foundations (3 credits)	MSE	520	Multiscale Modeling in Thermomechanics of Materials (3 credits)
ME	514	Thermodynamics of Solids (3 credits)	MSE	521	Statistics of Microstructures (3 credits)
ME	515	Convective Heat Transfer (3 credits)	MSE	523	Ceramics Processing (3 credits)
ME	516	Conduction and Radiation Heat Transfer (3 credits)	MSE	530	Elasticity (3 credits)
ME	517	Thin Films (3 credits)	MSE	534	Mechanics of Composite Materials (3 credits)
ME	520	Multiscale Modeling in Thermomechanics of Materials (3 credits)	MSE	537	Fracture Mechanics and Mechanisms (3 credits)
ME	521	Fundamentals of Fluids I (3 credits)	MSE	543	Polymer Materials and Engineering (3 credits)
ME	526	Statistical Thermodynamics (3 credits)	MSE	544	Natural Fibers (3 credits)
ME	527	Macroscopic Thermodynamics (3 credits)	MSE	545	Polymer and Composite Processing (3 credits)
ME	530	Elasticity (3 credits)	MSE	546	Engineered Wood Composites (3 credits)
ME	532	Finite Elements (3 credits)	MSE	547	Polymers and Surfaces for Adhesion (3 credits)
ME	534	Mechanics of Composite Materials (3 credits)	MSE	548	Natural Fiber Polymer Composites (3 credits)
ME	537	Fracture Mechanics and Mechanisms (3 credits)	MSE	592	Transmission of Electron Microscopy (3 credits)
ME	540	Advanced Dynamics of Physical Systems (3 credits)	NEUROSCI	520	Fundamentals of Neuroscience (4 credits)
ME	556	Numerical Modeling in Fluid Mechanics (3 credits)	NEUROSCI	540	Special Topics in Integrative Neuroscience (1-3 credits)
ME	565	Nuclear Reactor Engineering (3 credits)	NEUROSCI	541	Special Topics in Cellular and Molecular Neuroscience (1-3 credits)
ME	579	Advanced Topics in Mechanical Engineering (1-3 credits)	NEUROSCI	542	Special Topics in Interdisciplinary Neuroscience (1-3 credits)
ME	581	Control Systems (3 credits)	NEUROSCI	543	Special Topics in Behavioral/Clinical Neuroscience (1-3 credits)
ME	598	Seminar (1 credit)	PHIL	207	Philosophy of Religion (3 credits)
MGTOP	516	Time Series (3 credits)	PHIL	320	History of Ancient and Medieval Philosophy (3 credits)
MSE	402	Polymeric Materials (3 credits)	PHIL	321	History of Modern Philosophy (3 credits)
MSE	503	Advanced Topics in Materials Engineering (1-3 credits)	PHIL	322	Nineteenth-century Philosophy (3 credits)
MSE	505	Advanced Materials Science (3 credits)	PHIL	350	Philosophy of Science (3 credits)
MSE	507	Additive Manufacturing (3 credits)	PHIL	401	Advanced Formal Logic (3 credits)

PHIL	407	Seminar in Philosophy of Religion (3 credits)	PHYSICS	563	Physics of the Solid State (3 credits)
PHIL	420	Contemporary Continental Philosophy (3 credits)	PHYSICS	571	Methods of Theoretical Physics (3 credits)
PHIL	421	Kant (3 credits)	PHYSICS	581	Advanced Topics in Physics (3 credits)
PHIL	431	Aesthetics and Philosophy of Art (3 credits)	PL P	301	Food Mycology (3 credits)
PHIL	442	Philosophy of Mind (3 credits)	PL P	403	Advanced Cropping Systems (3 credits)
PHIL	443	Philosophy of Language (3 credits)	PL P	503	Advanced Cropping Systems (3 credits)
PHIL	446	Metaphysics (3 credits)	PL P	511	Viruses and Virus Diseases of Plants (4 credits)
PHIL	447	Theory of Knowledge (3 credits)	PL P	513	Plant Nematology (3 credits)
PHIL	460	Ethical Theory (3 credits)	PL P	514	Phylobacteriology (3 credits)
PHIL	462	Women and Ethics (3 credits)	PL P	521	General Mycology (3 credits)
PHIL	470	Philosophy of Law (3 credits)	PL P	526	Advanced Fungal Biology (4 credits)
PHIL	472	Social and Political Philosophy (3 credits)	PL P	535	Molecular Genetics of Plant and Pathogen Interactions (3 credits)
PHIL	501	Advanced Formal Logic (3 credits)	PL P	545	Statistical Genomics (3 credits)
PHIL	504	Special Topics in Philosophy (3 credits)	PL P	551	Epidemiology and Management of Plant Diseases (3 credits)
PHIL	507	Seminar in Philosophy of Religion (3 credits)	PL P	570	Techniques in Plant Pathology (3 credits)
PHIL	510	Seminar in the History of Philosophy (3 credits)	POL S	405	Comparative Criminal Justice Systems (3 credits)
PHIL	520	Seminar in Ethical Theory (3 credits)	POL S	445	Public Personnel Administration (3 credits)
PHIL	522	Seminar in Metaphysics (3 credits)	POL S	503	Research Methods in Political Science and Criminal Justice (3 credits)
PHIL	524	Seminar in Epistemology (3 credits)	POL S	516	Seminar on Law, Courts, and Judicial Politics (3 credits)
PHIL	530	Bioethics (2 credits)	POL S	530	American Foreign Policy: Theories and Applications (3 credits)
PHIL	532	Seminar in Business Ethics (3 credits)	POL S	531	Seminar in International Security (3 credits)
PHIL	535	Advanced Biomedical Ethics (3 credits)	POL S	534	Seminar in Comparative Politics (3 credits)
PHIL	543	Philosophy of Language (3 credits)	POL S	541	Seminar in Evaluation Research (3 credits)
PHIL	570	Philosophy of Law (3 credits)	POL S	542	Proseminar in Administration, Justice, and Applied Policy Studies (3 credits)
PHYSICS	450	Introduction to Quantum Mechanics (3 credits)	PSYCH	504	History of Psychology: Theoretical and Scientific Foundations (3 credits)
PHYSICS	463	Introduction to Solid State and Materials Physics (3 credits)	PSYCH	550	Social Psychology (3 credits)
PHYSICS	521	Classical Mechanics I (3 credits)	PSYCH	574	Clinical and Experimental Biopsychology (3 credits)
PHYSICS	533	Thermal and Statistical Physics I (3 credits)	PSYCH	577	Behavioral Pharmacology (3 credits)
PHYSICS	534	Thermal and Statistical Physics II (3 credits)	PSYCH	592	Cognition and Affective Bases of Behavior (3 credits)
PHYSICS	541	Electromagnetic Theory (3 credits)	SOC	356	Growing Up and Growing Older (3 credits)
PHYSICS	542	Electrodynamics (3 credits)	SOC	367	Juvenile Justice and Corrections (3 credits)
PHYSICS	550	Quantum Theory I (3 credits)			
PHYSICS	551	Quantum Theory II (3 credits)			
PHYSICS	552	Quantum Theory III (3 credits)			
PHYSICS	561	Atomic and Molecular Physics (3 credits)			

SOC	517	Seminar in Contemporary Sociological Theory (3 credits)	SOIL SCI	508	Environmental Spatial Statistics (3 credits)
SOC	523	Qualitative Methods Practicum (3 credits)	SOIL SCI	514	Environmental Biophysics (2 credits)
SOC	525	Practicum in Survey Research (3 credits)	SOIL SCI	521	Physical Chemistry of Soils (3 credits)
SOC	553	Social Organization and the Family (3 credits)	SOIL SCI	531	Soil Microbiology (3 credits)
SOE	304	Ecosystem Field Measurements (4 credits)	SOIL SCI	547	Soil Fertility Management (3 credits)
SOE	310	Modeling the Environment (4 credits)	STAT	360	Probability and Statistics (3 credits)
SOE	318	Wildlife Genetics (3 credits)	STAT	412	Statistical Methods in Research I (3 credits)
SOE	408	Field Geology (3 credits)	STAT	422	Sampling Methods (3 credits)
SOE	431	Wildlife Nutrition (3 credits)	STAT	508	Environmental Spatial Statistics (3 credits)
SOE	444	Environmental Assessment (4 credits)	STAT	516	Time Series (3 credits)
SOE	445	Hazardous Waste Management (3 credits)	STAT	520	Statistical Analysis of Qualitative Data (3 credits)
SOE	470	Introduction to Economic Geology (3 credits)	STAT	522	Biostatistics and Statistical Epidemiology (3 credits)
SOE	475	Groundwater (3 credits)	STAT	533	Theory of Linear Models (3 credits)
SOE	492	Special Topics (1-3 credits)	STAT	535	Regression Analysis (3 credits)
SOE	510	Species Distribution Modeling (3 credits)	STAT	536	Statistical Computing (3 credits)
SOE	520	Advanced Topics in Sedimentology (3 credits)	STAT	544	Applied Stochastic Processes (3 credits)
SOE	531	Fundamentals of Environmental Toxicology (3 credits)	STAT	548	Statistical Theory I (3 credits)
SOE	535	Integrated Water Resources Science and Management (3 credits)	STAT	549	Statistical Theory II (3 credits)
SOE	541	Orogenic Systems (2 credits)	STAT	565	Analyzing Microarray and Other Genomic Data (3 credits)
SOE	542	Extensional Tectonics (3 credits)	TCH LRN	520	Topics in Special Student Populations (1-4 credits)
SOE	544	Environmental Assessment (4 credits)	VET CLIN	499	Special Problems (1-4 credits)
SOE	545	Hazardous Waste Management (3 credits)	VET CLIN	587	Hospital Rotation (3 credits)
SOE	550	System Dynamics Models of Environmental Systems (3 credits)	VET CLIN	592	Seminar (1 credit)
SOE	552	Analytical Methods in Earth Sciences (3 credits)	VET CLIN	600	Special Projects or Independent Study (1-18 credits)
SOE	556	Foraging Ecology of Herbivores (2 credits)	VET MED	520	Veterinary Physiology (5 credits)
SOE	560	Advanced Igneous Petrology (3 credits)	VET MED	526	Domestic and Exotic Animal Behavior (2 credits)
SOE	583	Radiogenic Isotopes and Geochronology (3 credits)	VET MED	545	General Pathology (3 credits)
SOE	584	Stable Isotope Geochemistry (3 credits)	VET MICR	499	Special Problems (1-4 credits)
SOE	594	Environmental and Natural Resources Issues and Ethics (3 credits)	VET MICR	600	Special Projects or Independent Study (1-18 credits)
SOIL SCI	101	Organic Gardening and Farming (3 credits)	VET PH	499	Special Problems (1-4 credits)
SOIL SCI	360	World Agricultural Systems (3 credits)	VET PH	600	Special Projects or Independent Study (1-18 credits)
SOIL SCI	414	Environmental Biophysics (2 credits)	VIT ENOL	113	Introduction to Vines and Wines (3 credits)
SOIL SCI	415	Environmental Biophysics Laboratory (1 credit)	VIT ENOL	313	Viticulture (3 credits)
			VIT ENOL	413	Advanced Viticulture (3 credits)
			VIT ENOL	422	Sensory Evaluation of Food and Wine (3 credits)

778 Washington State University Cooperatively Offered Courses

- VIT ENOL 465 Wine Microbiology and Processing (3 credits)
- VIT ENOL 466 Wine Microbiology and Processing Laboratory (1 credit)
- VIT ENOL 496 Internship in a Winery (2 credits)
- WOMEN ST 462 Women and Ethics (3 credits)

FACULTY

C. Scott Green, President

Torrey Lawrence, Interim Provost and Executive Vice President

Russell Meeuf, Chair of the Faculty Senate

Alistar Smith, Vice Chair of the Faculty Senate

Francesca Sammaruca, Secretary of the Faculty

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