

TO: MEMBERS OF THE UNIVERSITY OF IDAHO FACULTY

The items listed below, approved by the University Curriculum Committee, will be considered to have the necessary faculty approvals unless a petition requesting further consideration of specific items is signed by five faculty members and submitted to the chair of the Faculty Senate within 14 calendar days after the date of circulation. If no petition is received within 14 days, the entire report will be submitted to the president for approval and transmittal to the regents, if regents' action is required. If a petition is received, the items in the report for which further consideration is requested will be referred to the Faculty Senate and the remainder of the report will move forward. On items referred to it, the council may: (1) affirm the action and report it to a meeting of the university faculty, (2) amend the action and report it to a meeting of the university faculty, or (3) rescind the action. *Note:* If a petition concerns courses or curricula in the College of Letters, Arts and Social Sciences or in the College of Agricultural and Life Sciences, and is signed by five faculty members of the respective college, those items will be returned to the college concerned for further consideration.

All Items below are considered effective Summer 2017 unless otherwise noted with the approved item.

COLLEGE OF ART AND ARCHITECTURE

ART AND ARCHITECTURE

1. Change the following course:

Art 122 ~~Art and~~ Design Process II (3 cr)

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-hr studios a wk and assigned work; attendance at outside events (lects, symposiums, Prichard and Univ Gallery openings).

~~Prereq: Art 121~~

~~Prereq or Coreq: Art 110~~

COLLEGE OF BUSINESS AND ECONOMICS

1. Make the following changes to the **General College Requirements for Graduation:**

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 [Marketing](#), PGA Golf Management ~~Option-Major~~ [options under Economics, Finance, Management and Human Resources, Management Information Systems, Marketing and Operations Management majors](#) which requires completion of at least 128 credit hours. The required program of study includes: (A) 54-57 credit hours in the CBE Common Requirements, and (B) 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 [Marketing](#), PGA Golf Management ~~options~~ [Option-major](#)).

BUSINESS

1. Make the following curricular changes to the **Major in Management and Human Resources** (B.S.Bus.):

BUS 411	Acquiring Human Capital	3 cr
BUS 417	Deploying and Developing Human Capital	3 cr

And one of the following emphases:

A. Management Emphasis

Management Elective:

Select one of the following courses (3 cr):

BUS 416	Developing and Managing Reward Systems	3 cr
BUS 418	Managing Organization Design and Leading Changes	3 cr
BUS 441	Maintaining Employee and Labor Relations	3 cr

Operations Management Elective:

Select one of the following courses (3 cr):

BUS 378	Project Management	3 cr
BUS 386	Food and Beverage Hospitality with Lab	4 cr
BUS 439	Systems and Simulation	4 cr

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BUS 456/ STAT 456	Quality Management	3 cr
BUS 470	Supply Chain Management	3 cr
BUS 472	Operations Planning and Scheduling	3 cr
INDT 362	Behavior Based Safety	3 cr
PSYC 446	Engineering Psychology	3 cr

Marketing and Entrepreneurship Elective:

Select three or four credits from one of the following courses (~~3 cr~~):

AGEC 333	Introduction to Sales	3 cr
<u>BUS 251</u>	<u>PGA Golf Management II</u>	<u>2 cr</u>
BUS 324	Consumer Behavior	3 cr
<u>BUS 385</u>	<u>PGA Golf Management III</u>	<u>2 cr</u>
BUS 414	Entrepreneurship	3 cr
BUS 415	New Venture Creation	3 cr
BUS 420	Promotional Strategy	3 cr
BUS 421	Marketing Research and Analysis	3 cr
BUS 422	Personal Selling and Sales Force Management	3 cr
BUS 424	Pricing Strategy and Tactics	3 cr
BUS 425	Retail Distribution Management	3 cr
BUS 426	Marketing Channels Management	3 cr
BUS 427	Services Marketing	3 cr
BUS 482	International Marketing	3 cr
BUS 495/ RMAT 495	Product Development and Brand Management	3 cr

Accounting and Finance Elective:

Select one of the following courses (3 cr):

ACCT 305	Accounting Information Systems	3 cr
ACCT 315	Intermediate Financial Accounting I	3 cr
ACCT 385	Cost and Management Accounting	3 cr
<u>ACCT 440</u>	<u>Fraud Examination</u>	<u>3 cr</u>
ACCT 482	Enterprise Accounting	3 cr
ACCT 483	Fundamentals of Federal Taxation	3 cr
BUS 302	Intermediate Financial Management	3 cr
BUS 381	International Finance	3 cr
<u>ECON 407</u>	<u>Public Finance</u>	<u>3 cr</u>

Information Systems Elective:

Select one of the following courses (3 cr):

BUS 353	Application Development	3 cr
BUS 355	Systems Analysis & Administration	3 cr
BUS 452	Business Telecommunications Management	3 cr

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BUS 453	Database Design	3 cr
BUS 454	Issues in Information Systems	3 cr
GEOG 385	GIS Primer	3 cr
MIS 455	Data Management for Big Data	3 cr

Courses to total 120 credits for this degree

B. Human Resources Management Emphasis

BUS 416	Developing and Managing Reward Systems	3 cr
BUS 418	Managing Organization Design and Leading Changes	3 cr
BUS 441	Maintaining Employee and Labor Relations	3 cr

HR Decision-Making Elective:

Select one of the following courses (3-4 cr):

ACCT 385	Cost and Management Accounting	3 cr
ACCT 482	Enterprise Accounting	3 cr
BUS 353	Application Development	3 cr
BUS 355	Systems Analysis & Administration	3 cr
BUS 421	Marketing Research and Analysis	3 cr
BUS 439	Systems and Simulation	4 cr
BUS 453	Database Design	3 cr
ECON 453/ STAT 433	Econometrics	3 cr
GEOG 385	GIS Primer	3 cr
MIS 455	Data Management for Big Data	3 cr
ORGS 444	Methods and Analysis in Organizational Science	4 cr
PSYC 218	Introduction to Research in the Behavioral Sciences	4 cr
PSYC 416	Industrial/Organizational Psychology	3 cr
PSYC 430	Tests and Measurements	3 cr

Specialized Electives:

Select [three or four credits from](#) one of the following courses (~~3 cr~~):

AOLL 560	Career Development in Organizations	3 cr
BUS 251	PGA Golf Management II	2 cr
BUS 385	PGA Golf Management III	2 cr
BUS 454	Issues in Information Systems	3 cr
COMM 347	Persuasion	3 cr
COMM 410	Conflict Management	3 cr
COMM 355	Organizational Communication	3 cr
CTE 472	Teaching and Learning in Occupation Education	3 cr
ECON 441	Labor Economics	3 cr
EDCI 301	Lrng, Dvlpmnt, & Assessment	3 cr
INDT 362	Behavior Based Safety	3 cr
INTR 316/	Explore Mentoring & Leadership	3 cr

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ORGS 317/ PSYC 317/ SOC 316		
JAMM 350	Public Relations Writing and Production	3 cr
ORGS 305	Nonprofit Organizations	3 cr
POLS 451	Public Administration	3 cr
PSYC 390	Psychology of Learning	3 cr
PSYC 440	Psychology of Judgement and Decision Making	3 cr
PSYC 496	Applied Behavior Analysis	3 cr
PSYC 541	Human Relations in the Workplace	3 cr
SOC 301	Introduction to Diversity and Stratification	3 cr

Courses to total 120 credits for this degree

COLLEGE OF ENGINEERING

ELECTRICAL AND COMPUTER ENGINEERING

1. Make the following curricular changes to the **Analog Integrated Circuit Design Graduate Academic Certificate**:

Note: A grade of 'B' or higher is required in all coursework for this academic certificate.

ECE 512	Analog Filter Design	3 cr
ECE 565	Introduction to Microelectronics Fabrication	3 cr
ECE 515	Analog Integrated Circuit Design	3 cr
ECE 517	Mixed Signal IC Design	3 cr

Electives (3 cr):

ECE 416	Applications of Linear Integrated Circuits	3 cr
ECE 410	Microelectronics II	3 cr
ECE 430	Microwave and Millimeter Wave Circuits	3 cr
ECE 445	Introduction to VLSI Design	3 cr
ECE 460	Semiconductor Devices	3 cr
ECE 513	Radio-Frequency IC Design	3 cr
ECE 518	Introduction to Electronic Packaging	3 cr
ECE 562	Semiconductor Theory	3 cr

Courses to total 12 credits for this certificate

2. Make the following curricular changes to the **Power System Protection and Relaying Graduate Academic Certificate**:

Note: A grade of 'B' or higher is required in all course work for this academic certificate.

ECE 422	Power Systems Analysis	3 cr
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ECE 523	Symmetrical Components	3 cr
ECE 525	Power System Protection and Relaying	3 cr
ECE 526	Protection of Power Systems II	

Electives (6 cr):

ECE 422	Power Systems Analysis	3 cr
ECE 452	Communication Systems	3 cr
ECE 476	Digital Filtering	3 cr
ECE 504	Special Topics	1-16 cr
ECE 523	Symmetrical Components	3 cr
ECE 524	Transients in Power Systems	3 cr
ECE 526	Protection of Power Systems II	3 cr

Courses to total 12 credits for this certificate

INDUSTRIAL TECHNOLOGY

1. Add the following courses, to replace previously approved FIRE courses:

INDT 408 Fire Safety Hazard Analysis (3 cr)

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.

Prereq: Permission

INDT 409 Fire Suppression Design and Detection (3 cr)

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.

Prereq: Permission

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INDT 410 Loss Control (3 cr)

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.

Prereq: Permission

INDT 411 Facility Fire Hazard Management (3 cr)

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.

Prereq: Permission

INDT 412 Structural Designs for Fire and Life Safety (3 cr)

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.

Prereq: Permission

INDT 413 Community Planning and Design for Fire Protection and Management (3 cr)

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.

Prereq: Permission

NUCLEAR ENGINEERING

1. Change the following courses:

NE ~~R~~535 Nuclear Criticality Safety ~~↓~~ (3 cr)

~~Same as 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. Physics of criticality, factors that affect reactivity, hand calculation techniques, experiments and the development of subcritical limits, criticality accidents, standards and regulations, evaluations.~~

Prereq: NE 450 or Permission

NE ~~R~~554 Radiation Detection and Shielding (3 cr)

~~Same as TM 535.~~ Radiation transport and shielding concepts. Methods for quantifying attenuation of nuclear particles and electromagnetic radiation. Radiation detection methods, data acquisition and processing.

Prereq: MATH 310 or Permission

TECHNOLOGY MANAGEMENT

1. Change the following courses:

TM 513 Nuclear Criticality Safety (3 cr)

~~See NE 535. In-depth overview of nuclear criticality safety including nuclear physics, fission 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, case studies, incident reporting and recovery, emergency procedures, and nuclear regulations and standards.~~

~~**Prereq:** Permission~~

TM 535 Radiation Detection and ~~Measurement~~ Shielding (3 cr)

~~See NE 554. This course is designed to provide in-depth understanding of nuclear radiations with focus on detection, measurement and health physics. Students will learn how to select the proper detector given the energy and type of radiation measured; analyze the results of counting experiments to calculate errors, uncertainties, and energy spectra; and to perform radiation measurements following proper health physics procedures. In-class and laboratory experiments are included.~~

~~**Prereq:** Permission~~

COLLEGE OF GRADUATE STUDIES

1. Make the following changes to the **Graduate Admission Categories**:

Graduate Admission of International Students

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~~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 admission status, students enroll in UI's American Language and Culture Program (ALCP) to achieve the academic units English language requirement prior to being granted full admission and commencing their degree programs. Please note that not all academic units grant deferred admission. International students in a 3+2 program are not eligible for deferred admission.~~

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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 the academic unit administering the program recommends it, and if 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; (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 conditions that the student must fulfill in order to be advanced to regular enrollment. Provisional enrollment may also be granted to a student who is otherwise eligible for regular enrollment but whose prospective academic unit specifies conditions that he or she must first meet (i.e. achievement of specific grades and/or completion of specific course work). International students who hold nonresident alien visas and students who are to be appointed to assistantships cannot be accepted in provisional enrollment.

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The admissions office notifies the student that he/she has been accepted for provisional enrollment. In the letter of acceptance, the following general and specific terms governing the student's provisional enrollment are stated:

1. A student may not remain in provisional enrollment status for more than 12 consecutive calendar months (a shorter period may be specified). Nor may a student remain in this status after completing nine credits (a lower credit limitation may be specified).
2. A student will be advanced from provisional to regular enrollment provided he or she maintains a GPA of at least 3.00 each semester while in the provisional status (a higher GPA may be specified), fulfills the conditions, if any, that were specified at the time of initial enrollment, and receives no incompletes.
3. A student who does not meet the stated conditions for advancement to regular enrollment within the specified time and credit limitations 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 his or her progress toward meeting the conditions for advancement.

The conditions specified for a student's advancement to regular enrollment are established at the time of his or her 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 his or her 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, allow a student to defer their admission for up to one year. The Graduate College will not defer admission for more than one year.

A student seeking deferred admission must contact the director of graduate studies in the department or program in which they were admitted requesting in writing the deferment. The Director of Graduate studies will communicate with department faculty and determine whether or not to grant the request for deferral.

A departmental memo or e-mail must be submitted from the Director of Graduate Studies to the Director of Graduate Admissions, requesting the deferment. After the Graduate College approves the request, the student's record will be inactivated for the term.

In order to re-activate admission for the new term, the student must submit an Application for Readmission through the on-line application system. The student will be charged the current fee for re-admission to the Graduate College.

The application for readmission application may be submitted any time after the deferral is approved but **before** registration opens for the newly-selected term. **Exception: International students are encouraged complete the readmission application at the same time as the deferral request, due to time constraints associated with their visa paperwork.**

Conditional Admission. Conditional admission may be granted to applicants who qualify academically, but who have not yet met UI's minimum English language proficiency requirement. In conditional admission status, students enroll in UI's American Language and Culture Program (ALCP) to achieve the academic units English language requirement prior to being granted full admission and commencing their degree programs. 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 nondegree students for up to 7 credits per semester of academic courses in addition to their fulltime 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 UI degree programs (other university and College of Graduate Studies restrictions may apply).

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INTERDISCIPLINARY STUDIES

1. Make the following changes to the **Major in Interdisciplinary Studies (M.A./M.S.)**:

Master of Arts/Science. Major in Interdisciplinary Studies.

~~An undergraduate cumulative grade point average of 3.00 is required. Prospective students should refer to the general admission requirements under the section "Graduate Admission to the University" for other admission requirements.~~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 his or her 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 his or her 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, INT 599 for research not directly related to a thesis, and INTR 501 for seminar. Your 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.

~~The objective of the interdisciplinary studies degree is to provide students with the opportunity to design specific programs of study of an interdisciplinary nature when the student's needs or desires do not fall within a currently prescribed graduate program. Individual study plans draw from courses offered in two or more graduate programs.~~

~~The interdisciplinary program has both a thesis option and a non-thesis option. A student choosing the thesis option may use up to six credits of INTR 500 toward the degree.~~

There is no typical study plan for an interdisciplinary studies degree program. Each student seeking the master degree in interdisciplinary studies ~~such a degree~~ 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. ~~and identify a program committee, subject to the following constraints: the program committee must have at least four members; the program committee must have 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 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 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 [Graduate College](#) [of Graduate Studies](#).

~~[Master of Science, Major in Interdisciplinary Studies.](#)~~

~~[See the Master of Arts, major in Interdisciplinary Studies entry.](#)~~

COLLEGE OF LETTERS, ARTS AND SOCIAL SCIENCES

JOURNALISM AND MASS MEDIA

1. Make the following curricular changes to the **Major in Advertising** (B.A. or B.S.):

Required course work includes the university requirements (see regulation J-3), the School of Journalism and Mass Media core, and the following:

JAMM 252	Introduction to Integrated Media Campaigns	3 cr
JAMM 267	Introduction to Media Design	3 cr
JAMM 364	Advertising Media Planning	3 cr
JAMM 367	Social Media Management and Analytics	3 cr
JAMM 466	Media Campaigns Strategy	3 cr
JAMM 468	Advanced Media Design	3 cr

Advertising majors are encouraged to apply for the Advertising Competition Team, JAMM 469.

Courses to total 120 credits for this degree

SOCIOLOGY AND ANTHROPOLOGY

1. Create the following prefix:

AFST (Africana Studies)

2. Add the following course:

AFST 101 Introduction to Africana Studies (3 cr)

This course provides an introduction to Africana Studies. Specifically, it will examine aspects of African History, Contemporary African 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 cotaught by affiliated faculty in the program, each presenting on their area of expertise.

COLLEGE OF NATURAL RESOURCES

NATURAL RESOURCES AND SOCIETY

1. Make the following curricular changes to the **Major in Natural Resource Conservation** (B.S.Nat.Resc.Consv.):

Required Course work includes the university requirements (see regulation J-3) and:

NRS 125 Introduction to Conservation and Natural Resources	3 cr
NRS 235/FOR 235 Society and Natural Resources	3 cr
NRS 310 Social Science Methods	4 cr
NRS 383 Natural Resource and Ecosystem Service Economics	3 cr
NRS 387 Environmental Communication Skills	3 cr
ECON 202 Principles of Microeconomics	3 cr
FOR 375 Introduction to Spatial Analysis for Natural Resource Management	3 cr
NR 101 Exploring Natural Resources	2 cr
STAT 251 Statistical Methods	3 cr
FOR 221/REM 221 Ecology	3 cr

~~NRS 125 is to be taken simultaneously with NR 101.~~

~~One writing course, such as (3 cr):~~

ENGL 207 Persuasive Writing	3 cr
ENGL 208 Personal & Exploratory Writing	3 cr
ENGL 313 Business Writing	3 cr
ENGL 316 Environmental Writing	3 cr
ENGL 317 Technical Writing	3 cr

~~Ecology and Environment (3 cr):~~

FOR 221/REM 221 Ecology	3 cr
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One of the following (3-4 cr):

MATH 143 Pre-calculus Algebra and Analytic Geometry	3 cr
MATH 160 Survey of Calculus	4 cr
MATH 170 Analytic Geometry and Calculus I	4 cr

And one of the following emphases:

A. Conservation Planning and Management Emphasis

~~Students must attend one, two-week long field studies course during summer session. Special fees are required for this and a few other courses.~~ To graduate a student must earn an average GPA 2.30 or higher in all NRS courses.

NRS 304 Conservation Social Sciences Field Studies	3 cr
NRS 310 Social Science Methods	4 cr
NRS 364/POLS 364 Politics of the Environment	3 cr
NRS 383 Natural Resource and Ecosystem Service Economics	3 cr
NRS 385 Conservation Management and Planning I	4 cr
NRS 311 Public Involvement in Natural Resource Management	3 cr
NRS 462/POLS 462 Natural Resource Policy	3 cr
NRS 475 Conservation Management and Planning II	4 cr
NRS 486 Public Involvement in Natural Resource Management	3 cr
NRS 411 Environmental Project Management and Decision Making	4 cr

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<u>NRS 498 Internship</u>	1-16 cr
<u>PSYC 101 Introduction to Psychology</u>	3 cr
<u>SOC 101 Introduction to Sociology</u>	3 cr

One of the following (4 cr):

BIOL 102 Biology and Society AND	3 cr
BIOL 102L Biology and Society Lab	1 cr
BIOL 115 Cells & the Evolution of Life AND	3 cr
BIOL 115L Cells and the Evolution of Life Laboratory	1 cr

One of the following (2-4 cr):

COMM 101 Fundamentals Public Speaking OR	2 cr
One semester of a foreign language course	3-4 cr

One of the following (3 cr):

<u>ENGL 207 Persuasive Writing</u>	3 cr
<u>ENGL 208 Personal & Exploratory Writing</u>	3 cr

One of the following (3 cr):

<u>ENGL 313 Business Writing</u>	3 cr
<u>ENGL 316 Environmental Writing</u>	3 cr
<u>ENGL 317 Technical Writing</u>	3 cr
<u>ENGL 322 Environmental Literature and Culture</u>	3 cr

One of the following (3 cr):

<u>ENVS 225 International Environmental Issues</u>	3 cr
<u>IS 322 International Environmental Organizations</u>	3 cr

One of the following (3 cr):

<u>AGEC 477 Law Ethics and the Environment</u>	3 cr
<u>ENVS 479 Intro to Environmental Regulations</u>	3 cr
<u>NRS 3865 Social-Ecological Systems</u>	3 cr

One of the following (3 cr):

POLS 101 Introduction to Political Science and American Government	3 cr
POLS 275 American State and Local Government	3 cr

One of the following (4 cr):

CHEM 101 Introduction to Chemistry I	4 cr
CHEM 111 Principles of Chemistry I	4 cr
GEOL 101 Physical Geology AND	3 cr
GEOL 101L Physical Geology Lab	1 cr

OneTwo of the following (~~3~~67-8 cr):

<u>BIOL 314 Ecology and Population Biology</u>	4 cr
FOR 326 Fire Ecology and Management	3 cr
<u>NRS 472/ FOR 472 Remote Sensing of the Environment</u>	4 cr
<u>REM 340 Ethnobotany</u>	3 cr
REM 440 Wildland Restoration Ecology	3 cr
<u>REM 429 Landscape Ecology</u>	3 cr
REM 459 Rangeland Ecology	2 cr

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AND

REM 460 Integrating GIS and Field Studies in Rangelands	2 cr
WLF 314 Ecology of Terrestrial Vertebrates	3 cr
WLF 440 Conservation Biology	3 cr

Contract Courses (12-18 cr)

Students must submit a contract for a minimum of 12 credits, completed through prior consultation and approval from the faculty advisor. Courses taken to fulfill major requirements above cannot be double counted for contract courses. All contract courses must be upper division (University of Idaho 3xx, 4xx, or 5xx level courses).

Students may fulfill their contract requirement by completing a University approved minor, certificate, or approved study abroad experience. Students are encouraged to make choices that strengthen their expertise and demonstrate proficiency in an area of professional interest. See the University of Idaho General Catalog for a list of approved minors and certificates (<http://www.uidaho.edu/registrar/classes/catalogs>).

Two of the following (6 cr):

NRS 490 Wilderness and Protected Area Management	3 cr
NRS 493/LAS 493 International Land Preservation and Conservation Systems	3 cr
LARC 480 The Resilient Landscape	3 cr
WLF 440 Conservation Biology	3 cr

Two of the following (6 cr):

ANTH 100 Introduction to Anthropology	3 cr
PSYC 101 Introduction to Psychology	3 cr
SOC 101 Introduction to Sociology	3 cr

12 credits from the following;

(If not chosen above) in at least 2 disciplines with at least 2 courses in one discipline:

AGEC 477 Law, Ethics and the Environment	3 cr
ANTH 428 Social and Political Organization	3 cr
BUS 321 Marketing	3 cr
COMM 410 Conflict Management	3 cr
NRS 462/POLS 462 Natural Resource Policy	3 cr
NRS 487 Environmental Education	3 cr
NRS 490 Wilderness and Protected Area Management	3 cr
NRS 493/LAS 493 International Land Preservation and Conservation Systems	3 cr
NRS 496 Monitoring Impacts in Protected Areas and Wilderness	3 cr
NRS 498 Internship	1-16 cr
GEOG 313 Global Climate Change	3 cr
GEOG 360 Population Dynamics and Distribution	3-4 cr - Max 4 cr
GEOG 455 Societal Resilience and Adaptation to Climate Change	3 cr
HIST 329 Idaho and the Pacific Northwest	3 cr
HIST 424 American Environmental History	3 cr
JAMM 350 Public Relations Writing and Production	3 cr
JAMM 444 Mass Media and Public Opinion	3 cr
PHIL 452 Environmental Philosophy	3 cr
POLS 451 Public Administration	3 cr
POLS 453 Public Management Techniques	3 cr
POLS 454 Public Organization Theory	3 cr
POLS 473 Sustainable Community Development Planning	3 cr

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POLS 480 Politics of Development	3 cr
PSYC 320 Introduction to Social Psychology	3 cr
PSYC 325 Cognitive Psychology	3 cr
SOC 313 Collective Behavior	3 cr
SOC 343 Power, Politics, and Society	3 cr

Courses to total 120 credits for this degree

B. Conservation Science Emphasis

To graduate a student must earn an average GPA of 2.00 or higher in all courses taught in the College of Natural Resources and complete an approved professional work experience in natural resources.

NRS 310 Social Science Methods	4 cr
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One writing course, such as (3 cr):

ENGL 207 Persuasive Writing	3 cr
ENGL 208 Personal & Exploratory Writing	3 cr
ENGL 313 Business Writing	3 cr
ENGL 316 Environmental Writing	3 cr
ENGL 317 Technical Writing	3 cr

One of the following (3-4 cr):

NRS 385 Conservation Management and Planning I	4 cr
NRS 475 Conservation Management and Planning II	4 cr
NRS 411 Environmental Project Management and Decision Making	4 cr
NRS 490 Wilderness and Protected Area Management	3 cr

One of the following (3-4 cr):

NRS 364/POLS 364 Politics of the Environment	3 cr
NRS 462/POLS 462 Natural Resource Policy	3 cr

One of the following (4 cr):

CHEM 101 Introduction to Chemistry I	4 cr
CHEM 111 Principles of Chemistry I	4 cr

One of the following (4 cr):

BIOL 114 Organisms and Environments	4 cr
BIOL 115 Cells & the Evolution of Life	3 cr
AND	
BIOL 115L Cells and the Evolution of Life Laboratory	1 cr

Natural Resource Science Restricted Electives (33 cr)

At least 15 cr from the following groups must be at the 400-level:

Fishery Science (6 cr):

FISH 314 Fish Ecology	3 cr
FISH 315 Fish Ecology Lab	1 cr
FISH 415 Limnology	4 cr
FISH 418 Fisheries Management	4 cr
FISH 422 Concepts in Aquaculture	4 cr
FISH 424 Fish Health Management	4 cr
FISH 430 Riparian Ecology and Management	3 cr

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Fire Ecology and Management (2-3 cr):

FOR 326 Fire Ecology and Management	3 cr
FOR 433 Fire and Fuel Modeling	2 cr
FOR 450 Fire Behavior	2 cr
FOR 454 Air Quality, Pollution, and Smoke	3 cr

Forestry (6 cr):

FOR 273 Forestry Sampling Methods	2 cr
FOR 320 Dendrology	4 cr
FOR 324 Forest Regeneration	3 cr
FOR 330 Forest Soil and Canopy Processes	4 cr
FOR 424 Silviculture Principles and Practices	4 cr
FOR 425 Forest and Soil Nutrient Cycling	3 cr
FOR 430 Forest Operations	3 cr
FOR 431 Low Volume Forest Roads	2 cr
FOR 436 Cable Systems	2 cr
FOR 462 Watershed Science and Management	3 cr
FOR 468 Forest and Plant Pathology	2 cr
FOR 472/REM NRS 472/ FOR 472 Remote Sensing of the Environment	4 cr

Renewable Materials (6 cr):

RMAT 321 Properties of Renewable Materials	3 cr
RMAT 436 Biocomposites	3 cr
RMAT 438 Introduction to Lignocellulosic Chemistry	1 cr
RMAT 444 Primary Products Manufacturing	3 cr
RMAT 450 Biomaterials Deterioration and Protection	2 cr
RMAT 491 Biomaterial Product and Process Development Lab	2 cr
RMAT 495 Product Development and Brand Management	3 cr

Rangeland Ecology and Management (6 cr):

REM 341 Systematic Botany	3 cr
REM 410 Principles of Vegetation Measurement	2 cr
REM 411 Wildland Habitat Ecology and Assessment	2 cr
REM 440 Wildland Restoration Ecology	3 cr
REM 452 Western Wildland Landscapes	2 cr
REM 456 Integrated Rangeland Management	3 cr
REM 459 Rangeland Ecology	2 cr
REM 460 Integrating GIS and Field Studies in Rangelands	2 cr
REM 472 Remote Sensing of the Environment	4 cr

Wildlife Science (6 cr):

WLF 314 Ecology of Terrestrial Vertebrates	3 cr
WLF 315 Techniques Laboratory	2 cr
WLF 440 Conservation Biology	3 cr
WLF 448 Fish and Wildlife Population Ecology	4 cr
WLF 482 Ornithology	4 cr
WLF 492 Wildlife Management	4 cr

Courses to total 120 credits for this degree

COLLEGE OF SCIENCE

BIOLOGICAL SCIENCES

1. Add the following courses:

BIOL J426/J526 Systems Biology (3 cr)

Systems Biology will use quantitative approaches including theory and computation to understand the dynamics and steady-state behaviors that emerge from physiological systems. Topics will include the transcriptional networks and their common motifs, robustness in chemotaxis and development, noise and variability, evolution of modularity, and optimality in metabolism. (Fall only).

Prereq: BIOL 115, MATH 170

BIOL 526 Systems Biology (3 cr)

See BIOL J426/J526.

BIOL 549 Computer Skills for Biologists (3 cr)

See BIOL J456/J549.

BIOL 565 Neurobiology (3 cr)

See BIOL J461/J565.

BIOL 573 Principles of Developmental Biology (3 cr)

See BIOL J474/J573.

2. Change the following course:

BIOL 484 Invertebrate Zoology (4 cr)

Morphology of freshwater, marine, and terrestrial invertebrates and phylogeny of major groups. Three lec and one 3-hr lab a wk. One required, weekend field trip. (Fall only)

Prereq: BIOL 114 and BIOL 115/115L

3. Drop the following courses:

BIOL 532 Immunology (3 cr)

See BIOL J432/J532.

BIOL 533 Pathogenic Microbiology (3 cr)

See BIOL J433/J533.

BIOL J441/J541 Cellular and Molecular Basis of Disease (3 cr)

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 assignment required for

grad cr. Recommended Preparation for 422: PLSC 476. Recommended Preparation for 522: PLSC 576. (Fall only)

Prereq: BIOL 310 or Gene 314; and BIOL 380

BIOL 541 Cellular and Molecular Basis of Disease (3 cr)

Same as BIOL J441/J541.

BIOL J462/J562 Molecular Parasitology (3 cr)

Survey course exploring the cellular and molecular mechanisms utilized by human and animal parasites to develop, interact with their hosts and cause disease. Graduate students will have to produce a final written report or presentation on a research article. Recommended preparation: BIOL 310 or Gene 314, and BIOL J432/J532. (Spring only)

Prereq: BIOL 154 or BIOL 250; and BIOL 300 or BIOL 380; or Permission

BIOL 562 Molecular Parasitology (3 cr)

See BIOL J462/J562.

4. Make the following curricular changes to the **Major in Biochemistry** (B.S.Biochem.):

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114 and BIOL 115. Required course work includes the university requirements (see regulation J-3) and:

BIOL 101	Perspectives in Biology	1 cr
BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
BIOL 310	Genetics	3 cr
BIOL 315	Genetics Lab	1 cr
BIOL 312	Molecular and Cellular Biology	3 cr
BIOL 313	Molecular and Cellular Laboratory	1 cr
BIOL 380	Biochemistry I	4 cr
BIOL 382	Biochemistry I Laboratory	2 cr
BIOL 400	Seminar	1-16 cr
BIOL 454/ BIOL 554	Biochemistry II	3 cr
CHEM 111	Principles of Chemistry I	4 cr
CHEM 112	Principles of Chemistry II	5 cr
CHEM 253	Quantitative Analysis	3 cr
CHEM 254	Quantitative Analysis: Lab	2 cr
CHEM 277	Organic Chemistry I	3 cr
CHEM 278	Organic Chemistry I: Lab	1 cr
CHEM 372	Organic Chemistry II	3 cr
MATH 170	Analytic Geometry and Calculus I	4 cr
MATH 175	Analytic Geometry and Calculus II	4 cr

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PHYS 211	Engineering Physics I	3 cr
PHYS 212	Engineering Physics II	3 cr
STAT 251	Statistical Methods	3 cr

One of the following Senior Experience courses (2 cr):

BIOL 401	Undergraduate Research	1-4 cr - Max 8 cr
BIOL 405	Practicum in Anatomy Laboratory Teaching	2-4 cr - Max 8 cr
BIOL 407	Practicum in Biology Laboratory Teaching	2-6 cr - Max 12 cr
BIOL 408	Practicum in Human Physiology Laboratory Teaching	2-4 cr - Max 8 cr
BIOL 411	Senior Capstone	2 cr

Select six credits of Approved electives from the following list are required. Additional classes can be substituted with prior approval from adviser and chairperson (6 cr):

BIOL 432	Immunology	3 cr
BIOL 444	Genomics	3 cr
BIOL 461	Neurobiology	3 cr
BIOL 482	Protein Structure and Function	3 cr
BIOL 485	Prokaryotic Molecular Biology	3 cr
BIOL 487	Eukaryotic Molecular Genetics	3 cr
CHEM 374	Organic Chemistry II: Lab	1 cr
CHEM 472	Medicinal Chemistry	3 cr
CHEM 473	Intermediate Organic Chemistry	3 cr
FS 520	Instrumental Analysis	2 cr
PLSC 488	Genetic Engineering	3 cr

One of the following (3 cr):

ENGL 207	Persuasive Writing	3 cr
ENGL 208	Personal & Exploratory Writing	3 cr
ENGL 317	Technical Writing	3 cr

One of the following (3 cr):

CHEM 302	Principles of Physical Chemistry	3 cr
CHEM 305	Physical Chemistry	3 cr
CHEM 306	Physical Chemistry	3 cr

Courses to total 120 credits for this degree

5. Make the following curricular changes to the **Major in Biology** (B.A. or B.S.):

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114 and BIOL 115. Required course work includes the university requirements (see regulation J-3) and:

BIOL 101	Perspectives in Biology	1 cr
BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr

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BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
BIOL 213	Principles of Biological Structure and Function	4 cr
BIOL 310	Genetics	3 cr
BIOL 315	Genetics Lab	1 cr
BIOL 312	Molecular and Cellular Biology	3 cr
BIOL 313	Molecular and Cellular Laboratory	1 cr
BIOL 314	Ecology and Population Biology	4 cr
BIOL 400	Seminar	1-16 cr
BIOL 421	Advanced Evolution/Population Dynamics	3 cr
CHEM 111	Principles of Chemistry I	4 cr
CHEM 112	Principles of Chemistry II	5 cr
CHEM 277	Organic Chemistry I	3 cr
CHEM 278	Organic Chemistry I: Lab	1 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

One of the following (3-4 cr):

BIOL 300	Survey of Biochemistry	3 cr
BIOL 380	Biochemistry I	4 cr

One of the following Senior Experience courses (2 cr):

BIOL 401	Undergraduate Research	1-4 cr - Max 8 cr
BIOL 405	Practicum in Anatomy Laboratory Teaching	2-4 cr - Max 8 cr
BIOL 407	Practicum in Biology Laboratory Teaching	2-6 cr - Max 12 cr
BIOL 408	Practicum in Human Physiology Laboratory Teaching	2-4 cr - Max 8 cr
BIOL 411	Senior Capstone	2 cr

One of the following (3 cr):

ENGL 207	Persuasive Writing	3 cr
ENGL 208	Personal & Exploratory Writing	3 cr
ENGL 317	Technical Writing	3 cr

One of the following (4 cr):

PHYS 111	General Physics I AND	3 cr
PHYS 111L	General Physics I Lab	1 cr
PHYS 211	Engineering Physics I AND	3 cr
PHYS 211L	Laboratory Physics I	1 cr

One of the following (4 cr):

PHYS 112	General Physics II AND	3 cr
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PHYS 112L	General Physics II Lab	1 cr
PHYS 212	Engineering Physics II	3 cr
	AND	
PHYS 212L	Laboratory Physics II	1 cr

One of the following (3 cr):

STAT 251	Statistical Methods	3 cr
STAT 301	Probability and Statistics	3 cr

14 credits of approved electives from the following list are required ~~(categories are intended only as a guide for student and advisor use)~~. Additional classes can be substituted with prior approval **from** ~~of~~ adviser and chairperson.

BIOL 324	Comparative Vertebrate Anatomy	4 cr
BIOL 416	Plant Diversity and Evolution	4 cr
BIOL 423	Comparative Vertebrate Physiology	3 cr
BIOL 425	Special Topics: Experimental Field Ecology	3 cr
BIOL 428	Microscopic Anatomy	4 cr
BIOL 432	Immunology	3 cr
<u>BIOL 433</u>	<u>Pathogenic Microbiology</u>	<u>3 cr</u>
BIOL 444	Genomics	3 cr
<u>BIOL 447</u>	<u>Virology</u>	<u>3 cr</u>
BIOL 456	Computer Skills for Biologists	3 cr
BIOL 460	Advanced Field Botany	3 cr
BIOL 461	Neurobiology	3 cr
BIOL 474	Principles of Developmental Biology	3 cr
BIOL 478	Animal Behavior	3 cr
BIOL 482	Protein Structure and Function	3 cr
BIOL 483	Mammalogy	3 cr
BIOL 484	Invertebrate Zoology	4 cr
<u>BIOL 485</u>	<u>Prokaryotic Molecular Biology</u>	<u>3 cr</u>
BIOL 487	Eukaryotic Molecular Genetics	3 cr
BIOL 489	Herpetology	4 cr
<u>CHEM 473</u>	<u>Intermediate Organic Chemistry</u>	<u>3 cr</u>
<u>ENT 438</u>	<u>Pesticides in the Environment</u>	<u>3 cr</u>
ENT 441	Insect Ecology	3 cr
<u>ENT 469</u>	<u>Forest Insects</u>	<u>3 cr</u>
FISH 481	Ichthyology	4 cr
MATH 437	Mathematical Biology	3 cr
PLSC 415	Plant Pathology	3 cr
PLSC 440	Advanced Laboratory Techniques	4 cr
PLSC 476	Cell Biology	3 cr
PLSC 488	Genetic Engineering	3 cr

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REM 341	Systematic Botany	3 cr
WLF 440	Conservation Biology	3 cr
WLF 448	Fish and Wildlife Population Ecology	4 cr
WLF 482	Ornithology	4 cr

Biology B.A. students must also complete:

6 credits (two courses) in the humanities in addition to the minimum university-wide general education requirement of 6 credits in the humanities*

3 credits (one course) in the social sciences in addition to the minimum university-wide general education requirement of 6 credits in the social sciences*

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 (1) 16 credits or four high-school units in one foreign language, or (2) 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 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.*

Courses to total 120 credits for this degree

6. Make the following curricular changes to the **Major in Microbiology** (B.S.Microbiol.):

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114 and BIOL 115. Required course work includes the university requirements (see regulation J-3) and:

BIOL 101	Perspectives in Biology	1 cr
BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
BIOL 250	General Microbiology	3 cr
BIOL 255	General Microbiology Lab	2 cr
BIOL 310	Genetics	3 cr
BIOL 315	Genetics Lab	1 cr
BIOL 312	Molecular and Cellular Biology	3 cr
BIOL 313	Molecular and Cellular Laboratory	1 cr
BIOL 380	Biochemistry I	4 cr
BIOL 400	Seminar	1-16 cr
CHEM 111	Principles of Chemistry I	4 cr

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CHEM 112	Principles of Chemistry II	5 cr
CHEM 277	Organic Chemistry I	3 cr
CHEM 278	Organic Chemistry I: Lab	1 cr
CHEM 372	Organic Chemistry II	3 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

One of the following (4 cr):

BIOL 401	Undergraduate Research	1-4 cr - Max 8 cr
PLSC 440	Advanced Laboratory Techniques	4 cr

One of the following Senior Experience courses (2 cr):

BIOL 401	Undergraduate Research	1-4 cr - Max 8 cr
BIOL 405	Practicum in Anatomy Laboratory Teaching	2-4 cr - Max 8 cr
BIOL 407	Practicum in Biology Laboratory Teaching	2-6 cr - Max 12 cr
BIOL 408	Practicum in Human Physiology Laboratory Teaching	2-4 cr - Max 8 cr
BIOL 411	Senior Capstone	2 cr

One of the following (3 cr):

ENGL 207	Persuasive Writing	3 cr
ENGL 208	Personal & Exploratory Writing	3 cr
ENGL 317	Technical Writing	3 cr

One of the following (4 cr):

PHYS 111	General Physics I	3 cr
	AND	
PHYS 111L	General Physics I Lab	1 cr
PHYS 211	Engineering Physics I	3 cr
	AND	
PHYS 211L	Laboratory Physics I	1 cr

One of the following (4 cr):

PHYS 112	General Physics II	3 cr
	AND	
PHYS 112L	General Physics II Lab	1 cr
PHYS 212	Engineering Physics II	3 cr
	AND	
PHYS 212L	Laboratory Physics II	1 cr

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~~15 credits of the following Microbiology Electives~~ **Approved electives from the following list are required. Additional classes can be substituted with prior approval from advisor and chairperson**

(15 cr):

BIOL 432	Immunology	3 cr
BIOL 433	Pathogenic Microbiology	3 cr
BIOL 441	Cellular and Molecular Basis of Disease	3 cr
<u>BIOL 444</u>	<u>Genomics</u>	<u>3 cr</u>
BIOL 447	Virology	3 cr
BIOL 462	Molecular Parasitology	3 cr
BIOL 482	Protein Structure and Function	3 cr
BIOL 485	Prokaryotic Molecular Biology	3 cr
BIOL 487	Eukaryotic Molecular Genetics	3 cr
<u>FS 416</u>	<u>Food Microbiology</u>	<u>3 cr</u>
<u>FS 417</u>	<u>Food Microbiology Lab</u>	<u>2 cr</u>
<u>MATH 437</u>	<u>Mathematical Biology</u>	<u>3 cr</u>
PLSC 476	Cell Biology	3 cr
PLSC 488	Genetic Engineering	3 cr
SOIL 425	Microbial Ecology	3 cr

One of the following (3 cr):

STAT 251	Statistical Methods	3 cr
STAT 301	Probability and Statistics	3 cr

Courses to total 120 credits for this degree

Note for double majors in Molecular Biology and Microbiology: Elective courses that count toward one degree cannot be counted as a science elective in the second degree

7. Make the following curricular changes to the **Major in Molecular Biology and Biotechnology** (B.S.M.B.B.):

To graduate in this program, students must earn a minimum grade of "C" in BIOL 114 and BIOL 115. Required course work includes the university requirements (see regulation J-3) and:

BIOL 101	Perspectives in Biology	1 cr
BIOL 114	Organisms and Environments	4 cr
BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
BIOL 250	General Microbiology	3 cr
BIOL 255	General Microbiology Lab	2 cr
BIOL 310	Genetics	3 cr
BIOL 315	Genetics Lab	1 cr
BIOL 312	Molecular and Cellular Biology	3 cr
BIOL 313	Molecular and Cellular Laboratory	1 cr
BIOL 380	Biochemistry I	4 cr

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BIOL 382	Biochemistry I Laboratory	2 cr
BIOL 400	Seminar	1-16 cr
BIOL 454/ BIOL 554	Biochemistry II	3 cr
CHEM 111	Principles of Chemistry I	4 cr
CHEM 112	Principles of Chemistry II	5 cr
CHEM 277	Organic Chemistry I	3 cr
CHEM 278	Organic Chemistry I: Lab	1 cr
CHEM 372	Organic Chemistry II	3 cr
MATH 170	Analytic Geometry and Calculus I	4 cr
PLSC 488	Genetic Engineering	3 cr

One of the following (3 cr):

BIOL 485	Prokaryotic Molecular Biology	3 cr
BIOL 487	Eukaryotic Molecular Genetics	3 cr

Select three of the following Approved electives from the following list are required. Additional classes can be substituted with prior approval from advisor and chairperson (8-10 cr):

BIOL 432	Immunology	3 cr
BIOL 433	Pathogenic Microbiology	3 cr
BIOL 444	Genomics	3 cr
BIOL 447	Virology	3 cr
BIOL 461	Neurobiology	3 cr
BIOL 462	Molecular Parasitology	3 cr
BIOL 474	Principles of Developmental Biology	3 cr
BIOL 482	Protein Structure and Function	3 cr
BIOL 485	Prokaryotic Molecular Biology	3 cr
BIOL 487	Eukaryotic Molecular Genetics	3 cr
<u>FS 416</u>	<u>Food Microbiology</u>	<u>3 cr</u>
<u>FS 417</u>	<u>Food Microbiology Lab</u>	<u>2 cr</u>
FS 520	Instrumental Analysis	2 cr
PLSC 476	Cell Biology	3 cr

One of the following (4 cr):

BIOL 401	Undergraduate Research	1-4 cr - Max 8 cr
BIOL 499	Directed Study	1-16 cr
PLSC 440	Advanced Laboratory Techniques	4 cr

One of the following Senior Experience courses (2 cr):

BIOL 401	Undergraduate Research	1-4 cr - Max 8 cr
BIOL 405	Practicum in Anatomy Laboratory Teaching	2-4 cr - Max 8 cr
BIOL 407	Practicum in Biology Laboratory Teaching	2-6 cr - Max 12 cr
BIOL 408	Practicum in Human Physiology Laboratory Teaching	2-4 cr - Max 8 cr

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BIOL 411 Senior Capstone 2 cr

One of the following (3 cr):

ENGL 207 Persuasive Writing 3 cr

ENGL 208 Personal & Exploratory Writing 3 cr

ENGL 317 Technical Writing 3 cr

One of the following (4 cr):

PHYS 111 General Physics I 3 cr

AND

PHYS 111L General Physics I Lab 1 cr

PHYS 211 Engineering Physics I 3 cr

AND

PHYS 211L Laboratory Physics I 1 cr

One of the following (4 cr):

PHYS 112 General Physics II 3 cr

AND

PHYS 112L General Physics II Lab 1 cr

PHYS 212 Engineering Physics II 3 cr

AND

PHYS 212L Laboratory Physics II 1 cr

One of the following (3 cr):

STAT 251 Statistical Methods 3 cr

STAT 301 Probability and Statistics 3 cr

Courses to total 120 credits for this degree

Note: Either BIOL 485 or BIOL 487 may be used as an elective if not taken above as a required course.

STATISTICAL SCIENCE

1. Add the following course:

STAT 419 Intro to SAS/R Programming (3 cr)

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.

Prereq: STAT 251, 301, or 416