

**General Curriculum Report #291**  
UNIVERSITY OF IDAHO – OFFICE OF THE REGISTRAR  
DECEMBER 6, 2017

**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 2018 unless otherwise noted with the approved item.**

**COLLEGE OF AGRICULTURAL AND LIFE SCIENCES**

**AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY**

1. Add the following course:

**AgEc 433 Advanced Sales (3 cr)**

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.

**Prereq:** AgEc 333 and MKTG 422

**ENTOMOLOGY, PLANT PATHOLOGY AND NEMATOLOGY**

1. Create the following prefixes:

**PLP – Plant Pathology**

**EPPN – Entomology, Nematology and Plant Pathology**

2. Add the following courses:

**EPPN 154 Microbiology and the World Around Us (3 cr)**

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 cr)**

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.

**Coreq:** EPPN 154

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### **PLP 511 Viruses and Virus Diseases of Plants (4 cr)**

Nature of plant viruses, vector-virus relationships and virus diseases of plants. Includes laboratory section.

**Prereq:** Biol 154 and Biol 155 or Biol 250 and 255 and PISc 102 or permission

### **PLP 515 Plant Pathology (3 cr)**

See PLP J415/J515.

### **PLP J416/J516 Plant Pathology Lab (1 cr)**

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.

**Prereq:** Biol 154 and Biol 155 or Biol 250 and 255 and PISc 102, or permission

**Coreq:** PLP 415/515

### **PLP 516 Plant Pathology Lab (1 cr)**

See PLP J416/J516.

### **PLP 522 Plant Bacteriology (3 cr)**

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.

**Prereq:** PLP 415/ 515 and Biol 154 and 155 or Biol 250 and 255 or permission

## **FAMILY AND CONSUMER SCIENCES**

1. Add the following course:

### **FCS 146 Adulting: Life, Love & Money (3 cr)**

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.

### **FCS 360 Sexuality Across the Lifespan (3 cr)**

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.

**Prereq:** FCS 105 and FCS 240

### **FCS 389 Introduction to Clinical Nutrition Laboratory (1 cr)**

Application of clinical nutrition principles. Three hrs. of lab per week (Spring only)

**Prereq:** FCS 361; Foods and Nutrition Majors or permission

**Coreq:** FCS 362

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## **FCS 431 Certified Family Life Educator Methodology (3 cr)**

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.

**Prereq:** FCS 240, 340, or 440

## **FCS 432 Apparel Promotion and Merchandising (3 cr)**

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.

**Prereq:** FCS 119, FCS 319, and FCS 323

## **FCS 468 Real Estate Management (3 cr)**

This course is organized around the sequence of the real estate transaction for the new real estate professional. Other aspects of real estate will include diversified properties that require management and the duties and obligation of the property manager.

**Prereq:** FCS 346

## 2. Change the following courses:

### **FCS 119 Introduction to Fashion and the Apparel Industry (3 cr)**

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. (Fall only)

~~**Prereq:** Apparel, Textiles and Design major; or Child, Family, and Consumer Studies major; or Permission~~

### **FCS 224 Apparel Construction and Assembly Processes (3 cr)**

Design conception, fabric characteristics, garment construction and assembly, principles of fitting, quality control for the apparel industry. Two 3-hour studios a week and assigned work. Students must complete this course with a grade of 'C' or higher as a prerequisite to future Clothing, Textiles and Design courses. (Spring only)

~~**Prereq:** FCS 123 with a grade of 'C' or better; and Apparel, Textiles, and Design; or Child, Family, and Consumer Studies major; or Permission~~

### ~~**FCS 3295**~~ **Career Development in Apparel & Textiles (1 cr, max 2)**

Preparation for professional internship and job search experiences, including identifying goals, skills, opportunities and strategies, fine-tuning resumes, the application processes, preparing for interviews, analyzing the internship, and introductory portfolio preparation. (Fall only)

~~**Prereq:** ~~CFD~~ ATD major or permission~~

### **FCS 384 Quantity Food Production and Equipment (3 cr)**

Principles and practices of food~~Food~~ production in large volume; foodservice systems; use and selection of institutional foodservice equipment and food; ~~supervised practice in food service~~. Three hours of lecture a week. (Fall only)

**Prereq:** FCS ~~270~~275 or Permission

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## **FCS 385 ~~Intro Dietetics Supervised Practice I~~ Quantity Food Production and Equipment Lab (2 cr)**

~~CPD supervised practice experience with emphasis in quantity food production. Weekly rotations in food service facilities with on-line discussions. One 3-hour lab and one recitation per wk.~~ Quantity food production lab and supervised practice experience including equipment training, recipe development and testing, theme meal production, and foodservice facility rotations. (Fall only)

**Prereq:** FCS 270 and FCS 275

**Coreq:** FCS 384

## **FCS 401 Professional Ethics and Practice in CFCS (1 cr)**

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.

**Prereq:** Major in Child, Family, and Consumer Studies

~~Coreq: FCS 498~~

## **FCS 480 Assessment: Early Childhood/SPED (3 cr)**

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: FCS 234 and FCS 333

**Prereq:** "C" or better in FCS 234, FCS 235, & EDSP 300

## **FCS 481 Early Childhood SPED Curriculum (3 cr)**

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: FCS 234 and FCS 333.

**Prereq:** "C" or better in FCS 234, EDSP 300, & EDCI 302

### 3. Make the following curricular changes to the **Major in Apparel, Textiles, and Design** (B.S.F.C.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.

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, career goals, and 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](#)

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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 specifications 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) and:

ART 100	World Art and Culture	3 cr
MKTG 321	Marketing	3 cr
<del>COMM 101</del>	<del>Fundamentals Public Speaking</del>	<del>2 cr</del>
FCS 105	Individual and Family Development	3 cr
FCS 119	Introduction to Fashion and the Apparel Industry	3 cr
FCS 123	Textiles	3 cr
FCS 224	Apparel Construction and Assembly Processes	3 cr
<u>FCS 295</u>	<u>Career Development in Apparel and Textiles</u>	<u>1 cr</u>
FCS 319	Digital Illustration for the Apparel Industry	3 cr
FCS 323	Apparel Product Development	3 cr
FCS 324	Patternmaking	4 cr
FCS 329	History of Western Dress	3 cr
<del>FCS 395</del>	<del>Career Development in Apparel &amp; Textiles</del>	<del>1 cr — Max 2 cr</del>
FCS 419	Dress and Culture	3 cr
FCS 424	Apparel Product Line Development: Senior Capstone	4 cr

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<a href="#">FCS 432</a>	<a href="#">Apparel Promotion and Merchandising: Senior Capstone</a>	3 cr
FCS 448	Consumer Economic Issues	3 cr
<a href="#">FCS 494</a>	<a href="#">Portfolio Development</a>	3 cr

### One of the following (3 cr):

PSYC 101	Introduction to Psychology	3 cr
SOC 101	Introduction to Sociology	3 cr

### One of the following (3-4 cr):

ECON 201	Principles of Macroeconomics	3 cr
ECON 202	Principles of Microeconomics	3 cr
ECON 272	Foundations of Economic Analysis	4 cr

### One of the following (3 cr):

PSYC 320	Introduction to Social Psychology	3 cr
SOC 313	Collective Behavior	3 cr
SOC 340	Social Change & Globalization	3 cr

### One of the following (3 cr):

ENGL 313	Business Writing	3 cr
ENGL 317	Technical Writing	3 cr

### Anthropology Elective (3 cr)

ANTH	Anthropology Elective	3 cr
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### Area of Focus (18 cr):

An Area of Focus Selected With the Guidance of an Advisor

Courses to total ~~128~~**120** credits for this degree

## FOOD SCIENCE

1. Add the following course:

### FS 525 Engineering Principles for Foods (3 cr)

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.

**Prereq:** FS 303, Phys 111, and Math 160 or 170

## PLANT SCIENCES

1. Change the following courses:

### PISc 401 Plant Physiology (3 cr)

Application of physiological principles to the management of plants in agronomic, horticultural and forest systems. (Spring, alt even/yrs)

**Prereq:** PISc 205 [or Biol 115 and Biol 115L or Permission](#)

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## ~~PLSc~~PLP J415/J515 Plant Pathology (3 cr)

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-hr lectures. (Fall only)

**Prereq:** Biol 154 and Biol 155; or Biol 250; and PLSc 102; or Permission

2. Make the following curricular changes to the **Major in Biotechnology and Plant Genomics (B.S.Pl.Sc.)**

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

### Required Courses:

BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
PLSC 102	The Science of Plants in Agriculture	3 cr
PLSC 400	Seminar	1 cr
SOIL 205	The Soil Ecosystem	3 cr

### One of the following (3 cr):

AGED 406	Exploring International Agriculture	3 cr
POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	3 cr

### One of the following (4-5 cr):

BIOL 154	Introductory Microbiology	3 cr
BIOL 155	Introductory Microbiology Laboratory	1 cr
BIOL 250	General Microbiology	3 cr
BIOL 255	General Microbiology Lab	2 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 (3 cr):

<del>ENGL 207</del>	<del>Persuasive Writing</del>	<del>3 cr</del>
ENGL 313	Business Writing	3 cr
<del>ENGL 316</del>	<del>Environmental Writing</del>	<del>3 cr</del>
ENGL 317	Technical Writing	3 cr

### 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

### One of the following (3 cr):

PLSC 398	Internship	1-6 cr - Max 6 cr
PLSC 402	Undergraduate Research in Plant Science	1-6 cr - Max 6 cr
PLSC 499	Directed Study	1-16 cr

### Biotechnology and Plant Genomics Courses

#### Required Courses

BIOL 380	Biochemistry I	4 cr
BIOL 444	Genomics	3 cr
CHEM 112	Principles of Chemistry II	5 cr

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CHEM 277	Organic Chemistry I	3 cr
CHEM 278	Organic Chemistry I: Lab	1 cr
GENE 314	General Genetics	3 cr
PLSC 207	Introduction to Biotechnology	3 cr
PLSC 401	Plant Physiology	3 cr
PLSC 415	Plant Pathology	3 cr
PLSC 433	Plant Tissue Culture Techniques	3 cr
PLSC 440	Advanced Laboratory Techniques	4 cr
PLSC 446	Plant Breeding	3 cr
PLSC 486	Plant Biochemistry	3 cr
PLSC 488	Genetic Engineering	3 cr
STAT 251	Statistical Methods	3 cr

### Biotechnology and Genomics of Plants Electives (12 cr):

BIOL 213	Principles of Biological Structure and Function	4 cr
BIOL 482	Protein Structure and Function	3 cr
BIOL 485	Prokaryotic Molecular Biology	3 cr
BIOL 487	Eukaryotic Molecular Genetics	3 cr
ENT 322	General and Applied Entomology	4 cr
PLSC 201	Principles of Horticulture	3 cr
PLSC 205	General Botany	4 cr
PLSC 338	Weed Control	4 cr
PLSC 407	Field Crop Production	3 cr
PLSC 410	Invasive Plant Biology	3 cr
PLSC 438	Pesticides in the Environment	3 cr
PLSC 451	Vegetable Crops	3 cr
PLSC 490	Potato Science	3 cr
SOIL 206	The Soil Ecosystem Lab	1 cr
SOIL 446	Soil Fertility	1-3 cr - Max 3 cr

### Courses to total 120 credits for this degree

3. Make the following curricular changes to the **Major in Horticulture and Urban Agriculture (B.S.Pl.Sc.)**

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

#### Required Courses:

BIOL 115	Cells & the Evolution of Life	3 cr
BIOL 115L	Cells and the Evolution of Life Laboratory	1 cr
PLSC 102	The Science of Plants in Agriculture	3 cr
PLSC 400	Seminar	1 cr
SOIL 205	The Soil Ecosystem	3 cr

#### One of the following (3 cr):

AGED 406	Exploring International Agriculture	3 cr
POLS 441	Genes and Justice: Comparative Biotechnology Policy Formation	3 cr

#### One of the following (4-5 cr):

BIOL 154	Introductory Microbiology	3 cr
BIOL 155	Introductory Microbiology Laboratory	1 cr
BIOL 250	General Microbiology	3 cr



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PLSC 488	Genetic Engineering	3 cr
SOIL 446	Soil Fertility	1-3 cr - Max 3 cr
STAT 251	Statistical Methods	3 cr

**Courses to total 120 credits for this degree.**

4. Make the following curricular changes to the **Minor in Crop Science**:

<del>ENT 322</del>	<del>General and Applied Entomology</del>	<del>4 cr</del>
PLSC 102	The Science of Plants in Agriculture	3 cr
PLSC 338	Weed Control	4 cr
PLSC 407	Field Crop Production	3 cr
<a href="#">PLSC 446</a>	<a href="#">Plant Breeding</a>	<a href="#">3 cr</a>
<a href="#">GENE 314</a>	<a href="#">Genetics</a>	<a href="#">3 cr</a>
<del>PLSC 415</del>	<del>Plant Pathology</del>	<del>3 cr</del>
<del>SOIL 205</del>	<del>The Soil Ecosystem</del>	<del>3 cr</del>

**Two of the following courses (6 credits):**

PLSC 408	Cereal Science	3 cr
PLSC 438	Pesticides in the Environment	3 cr
<a href="#">PLSC 451</a>	<a href="#">Vegetable Crop Production</a>	<a href="#">3 cr</a>
<a href="#">PLSC 440</a>	<a href="#">Advanced Lab Techniques</a>	<a href="#">4 cr</a>
<a href="#">PLSC 488</a>	<a href="#">Genetic Engineering</a>	<a href="#">3 cr</a>
<a href="#">PLSC 490</a>	<a href="#">Potato Science</a>	<a href="#">3 cr</a>
<a href="#">SOIL 205</a>	<a href="#">The Soil Ecosystem</a>	<a href="#">3 cr</a>
	<b>AND</b>	
<a href="#">SOIL 206</a>	<a href="#">The Soil Ecosystem Lab</a>	<a href="#">1 cr</a>
<del>PLSC 446</del>	<del>Plant Breeding</del>	<del>3 cr</del>
SOIL 446	Soil Fertility	1-3 cr - Max 3 cr

**Courses to total ~~26~~22 credits for this minor**

5. Make the following curricular changes to the **Minor in Horticulture**:

PLSC 102	The Science of Plants in Agriculture	3 cr
PLSC 201	Principles of Horticulture	3 cr

**Three of the following courses (9 cr):**

PLSC 300	Plant Propagation	3 cr
PLSC 340	Nursery Management	3 cr
PLSC 433	Plant Tissue Culture Techniques	3 cr
PLSC 464	Landscape Maintenance	3 cr

**Two of the following courses (6 cr):**

LARC 288	Plant Materials and Design 1	3 cr
<a href="#">PLSC 451</a>	<a href="#">Vegetable Crop Production</a>	<a href="#">3 cr</a>
<a href="#">PLSC 490</a>	<a href="#">Potato Science</a>	<a href="#">3 cr</a>
SOIL 205	The Soil Ecosystem	3 cr

**Courses to total 21 credits for this minor**

**SOIL AND WATER SYSTEMS**

1. Add the following cross-listed course:

**SOIL 450 Environmental Hydrology (3 cr)**

See ENVS 450.

**COLLEGE OF ART AND ARCHITECTURE**

**ARCHITECTURE**

1. Make the following curricular changes to the **Major in Architecture (M.Arch.)**:

Candidates must fulfill the requirements of the College of Graduate Studies and the Architecture program. Twenty-four of the 45 credits required for this degree must be at the 500 level, including the following courses: ARCH 510 Graduate Seminar (2 cr), ARCH 553 Architectural Design VII (6 cr), ARCH 554 Architectural Design VIII (6 cr), and ARCH 556 Architectural Design IX (6 cr). The remaining courses required to complete credits for this degree may be 400- or 500-level architecture courses or 300- or 400-level courses in supporting areas.

**Required courses include:**

ARCH 510	Graduate Project Seminar	3 cr
ARCH 553	Integrated Architectural Design	6 cr
ARCH 554	Architectural Design: Vertical Studio	6 cr - Max 12 cr
ARCH 556	Graduate Project	6 cr
ARCH 568	Technical Integration in Design	3 cr
ARCH 575	Professional Practice	3 cr

**Graduate Architecture Electives selected from the following (6 cr):**

ARCH 502	Directed Study	1-16 cr
ARCH 504	Special Topics	1-16 cr
ARCH 511	Native American Architecture	3 cr
ARCH 512	Identity and Place in Global Space	3 cr
ARCH 513	Architectural Theory: Modernism into Postmodernism	3 cr
ARCH 520	Architectural Research Methods	3 cr
ARCH 521	China Program Preparation Seminar	2 cr
ARCH 522	China's Urbanization Seminar	2 cr
ARCH 523	Cultural & Ethical Issues in Global Architectural Practice	2 cr
<a href="#">ARCH 552</a>	<a href="#">Alternative Graduate Design Experience</a>	<a href="#">6 cr</a>
ARCH 570	Natural Lighting	3 cr
ARCH 571	Building Performance Evaluation	3 cr
ARCH 572	Integrated Design Seminar	1 cr - Max 4 cr
ARCH 573	Daylight Design and Simulation	3 cr
ARCH 574	Building Performance Simulation for Integrated Design	3 cr
ARCH 580	British Green Architecture	2 cr
ARCH 585	Urban Design Seminar	3 cr
ARCH 599	Non-thesis Master's Research	1-16 cr

Equivalent courses 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 and the Architecture program. Master of Architecture degree requirements are listed above.

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## ART AND DESIGN

1. Change the following courses:

### Art 221 Introduction to Graphic Design (3 cr)

Creative problem solving with emphasis on [two dimensional 2-D](#) solutions to [formal and](#) conceptual [design](#) problems; [fundamental design principles are reiterated and developed into visual communication translation of concept into form](#) using word, [and](#) image, [and](#) layout; [introduction to graphic design theory](#). [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 a week and assigned work.

~~Prereq: Art 121-122 or Permission~~

### Art 222 Introduction to Typography (3 cr)

~~Continued translation of concept into form~~ [Visual communication design](#) with emphasis on typography, letterforms, and typographic syntax. ~~The potential of type as image is emphasized;~~ [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 a week and assigned work.

~~Prereq: Art 121-122 or Permission~~

### Art 271 Interaction Design I (3 cr)

Introduction to ~~interactive design methodologies;~~ [User Experience \(UX\) and User Interaction \(UI\) design practices,](#) including usability strategies and [user testing, with emphasis on design and development for mobile devices.](#) ~~best practices for interaction design. Various industry standard software and Open Source Tools will be introduced. Relevant industry standard programming languages will be covered throughout semester.~~ Exercises and projects assigned will address production project workflows including: project proposal, ~~mind mapping, wireframes & flowcharts, layout design, and technical development.~~ [product identity, design personas, user personas, development of user interfaces, documentation of product user flows, and live prototyping using industry standard software.](#) Two 3-hr studios a week and assigned work. Recommended Preparation: ~~Basic~~ [Working](#) knowledge of digital design software or Art 216 (strongly recommended).

### Art 272 Experiential Design I (3 cr)

Introduction to Experiential Design. ~~strategies and methodologies that focus upon~~ [immersive storytelling, and](#) place making, [and theming, and the interfaces that connect content to environments.](#) Exercises and projects ~~assigned will analyze and~~ explore [a variety of scenarios, including retail and dining, entertainment, and cultural and educational venues.](#) ~~the use of rich media, technology, and interface design.~~ Two 3-hr studios a week and assigned work.

Recommended Preparation: ~~Basic~~ [Working](#) knowledge of digital design software or Art 216 (strongly recommended).

### Art 321 Graphic Design: Concepts (3 cr, 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 a week and assigned work.

Prereq: Art 221 and 222, or Permission

### Art 322 Graphic Design: Studio (3 cr, max 6)

~~Graphic problem solving~~ [Visual communication design and problem solving](#) in the community environment; [strategies for](#) client interaction, project presentation and production [preparation are practiced](#) ~~techniques for the graphic designer.~~ Two 3-hour studios a week and assigned work.

Prereq: Art 221 and 222, or Permission

### Art 370 Intermediate/Advanced Interaction + Experiential Design (3 cr, max 9)

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~~Advanced analysis of interaction and experiential design and development strategies and methodologies. Emphasis on individual development in conceptual and technical abilities. Collaboration, installation and exhibition of work outside of class may be assigned.~~ Building on the coursework of ART 271 and 272, intermediate/advanced combination of both the built environment and virtual experiences as expressed in the development of individual, term-length projects. Two 3-hr studios a week and assigned work.

**Prereq:** Art core, Art 216, ~~and~~ Art 271 ~~or~~ and Art 272; or Permission

### **Art 515 (s) Art Faculty Studio (3-6 cr, max 12)**

Open only to art majors. Studio research taken with support of art & design faculty group; from the entire art faculty; students are required to arrange at least two three intensive studio critiques/faculty presentations required each semester.

2. Drop the following courses:

### **Art 510 Gallery (1-3 cr, max 6)**

Descriptive analysis of gallery functions; hands-on student participation installing, packaging art works for shipping, lighting, promotions, advertising and marketing; speakers series of professionals in the field or allied areas; e.g., gallery directors, artists as presenters/installers, professional art movers.

**Prereq:** Permission of UI Gallery director

## **BIOREGIONAL PLANNING AND COMMUNITY DESIGN**

1. Add and joint list the following courses:

### **BIOP J423/J523 Planning Sustainable Places (3 cr)**

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.

### **BIOP 523 Planning Sustainable Places (3 cr)**

See BIOP J423/J523.

## **INTERIOR DESIGN**

1. Change the following courses:

### **ID 344 Digital Design Tools for Interior Design (~~1~~ 2 cr)**

Introduction to software programs, with emphasis on Revit, for use in designing environments. Including but not limited to 3-D modeling. ~~Meets once per week.~~  
Coreq: ID 351 or Permission

### **ID 368 Materials and Specifications (3 cr)**

In-depth study of interior finishes, materials, and products; emphasis on performance characteristics, manufacturing methods, testing, codes, specifications, and professional liability. Field trips reqd at student expense. ~~Recommended Preparation: FCS 123.~~

### **ID 451 Interior Design V (6 cr)**

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 a week and assigned work;

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field trips reqd at student expense; some class jury sessions will meet outside of scheduled hours. Recommended Preparation: ~~Arch 244 and~~ ID 443.  
**Prereq:** ID 352

**LANDSCAPE ARCHITECTURE**

1. Drop the following courses:

**LArc 550 Landscape Architecture Studio 1 (3 cr)**  
See LArc J353/J450/J550.

**LArc 551 Landscape Architecture Studio 6 (3 cr)**  
See LArc J455/J551.

**LArc 552 Landscape Architecture Studio 3 (3 cr)**  
See LArc J363/J454/J552.

**LArc 553 Landscape Architecture Studio 8 (3 cr)**  
See LArc J465/J553.

**VIRTUAL TECHNOLOGY AND DESIGN**

1. Change the following course:

**VTD 367 ~~Advanced Animation~~ Visual Effects (3 cr)**

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/lab a week and associated work. (Spring only)

**Prereq:** VTD 266 or Permission

2. Make the following curricular changes to the **Major in Virtual Technology and Design (B.S.)**:

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

ART 110	Integrated Art and Design Communication	2 cr
ART 112	Drawing as Integrated Design Thinking	2 cr
ART 121	Integrated Design Process	2 cr
CS 112	Computational Thinking and Problem Solving	3 cr
PHYS 111	General Physics I	3 cr
PHYS 111L	General Physics I Lab	1 cr
VTD 151	Virtual World Building 1	2 cr
VTD 152	Virtual World Building 2	2 cr
VTD 153	Virtual World Building 3	2 cr
VTD 154	Virtual World Building 4	2 cr
VTD 245	Advanced Modeling	3 cr
VTD 246	Advanced Lighting and Materials	3 cr
VTD 253	Virtual Design I	3 cr
VTD 254	Virtual Design II	3 cr
VTD 271	Interactive Technologies	3 cr
VTD 355	Virtual Design III	4 cr
VTD 356	Virtual Design IV	4 cr
VTD 367	Advanced Animation	3 cr
VTD 372	Advanced Interactive Technologies	3 cr
VTD 400	Seminar	1-16 cr

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VTD 457	Capstone Design Studio I	6 cr
VTD 458	Capstone Design Studio II	6 cr

## One of the following (3-4 cr):

<del>MATH 143</del>	<del>Pre-calculus Algebra and Analytic Geometry</del>	<del>3 cr</del>
<del>MATH 160</del>	<del>Survey of Calculus</del>	<del>4 cr</del>
<del>MATH 170</del>	<del>Analytic Geometry and Calculus I</del>	<del>4 cr</del>
<del>MATH 175</del>	<del>Analytic Geometry and Calculus II</del>	<del>4 cr</del>

## History or Theory Courses (~~6~~12 cr):

~~Two~~ Advisor-approved History or Theory Courses ~~6~~12 cr

*Minimum one (3 cr) 400-level. Must be associated with the disciplines of architecture, art, film, media, music or theatre, with approval of the VTD program.*

## Directed Electives (8-9 cr):

Three Directed Elective Courses 8-9 cr  
*Elective Courses that allow a student to develop an emphasis area or breadth in a supporting discipline, with approval of VTD program.*

## Courses to total 120 credits for this degree

## COLLEGE OF EDUCATION, HEALTH AND HUMAN SCIENCES

### CURRICULUM AND INSTRUCTION

1. Add the following course:

#### **EDCI 453 Phonics, Phonological Awareness, Fluency, and Assessment (1 cr)**

Specific methods, research, and strategies providing competency in phonological awareness, phonics, fluency, and assessments and intervention strategies.

**Prereq or Coreq:** EDCI 302 or MustT 383; or Permission

2. Add and joint list the following courses:

#### **EDSP J430/J530 Assistive Technology and Universal Design for Learning for Pre-K12 (2 cr)**

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, EDSP 350

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## EDSP J448/J548 Special Education Curriculum (3 cr)

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

3. Change the following courses:

## EDSP 530 Assistive Technology and Universal Design for Learning for Pre-K12 (2 cr)

~~See EDSP J430/J530. This course is designed to introduce students to assistive technology and universal design for learning as they are woven into the PreK12 community to support all students including those with disabilities access and interact with the general education curriculum. This course will increase participants' understanding of the continuum of assistive technologies to universal design and expose them optimal systematic formats for successful implementation. Focus will move from an IEP team based process, of student evaluations, reporting, training, and follow up, to a general education classroom instructional design model with an understanding of the impact on school improvement.~~

## EDSP 548 Special Education Curriculum (3 cr)

~~See EDSP J448/J548. Theories of curriculum; models of teaching, instructional strategies, evaluation of student progress and service delivery; issues and trends in special education. (Fall only)~~

4. Make the following changes to the **Physical Education Teaching Minor**:

### ~~30 to 31~~ 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 section.

<del>H&amp;S 288</del>	<del>First Aid: Emergency Response</del>	<del>2 cr</del>
MVSC 201	Physical Activity, Wellness & Behavior Change for Healthy Active Lifestyles	3 cr
PEP 107	Movement Fundamentals	1 cr
<del>PEP 161</del>	<del>Introduction to Physical Education</del>	<del>1 cr</del>
PEP 360	Motor Behavior	3 cr
<del>PEP 380</del>	<del>Assessment &amp; Research in Physical Education Pedagogy</del>	<del>3 cr</del>
PEP 412	Elementary Methods in Physical Activity Pedagogy	3 cr
<u>PEP 413</u>	<u>Foundations and Assessment in Physical Activity Pedagogy</u>	<u>3 cr</u>
PEP 421	Secondary Methods in Physical Activity Pedagogy	3 cr
PEP 424	Inclusive Physical Education and Recreation	3 cr
<del>PEP 440</del>	<del>Curriculum &amp; Administration in Physical Activity Pedagogy</del>	<del>1 cr</del>

### **One of the following (3 cr):**

<del>PEP 300</del>	<del>Applied Human Anatomy and Biomechanics</del>	<del>3 cr</del>
PEP 418	Physiology of Exercise	3 cr

### **One of the following individual activity courses (1 cr):**

<del>PEP 132</del>	<del>Skill and Analysis of Striking and Net/Wall Activities</del>	<del>1 cr</del>
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~~PEP 133 Skill and Analysis of Target and Invasion Activities 1 cr~~

**One of the following team activity courses (1 cr):**

~~PEP 134 Skill and Analysis of Recreation and Outdoor Activities 1 cr~~

~~PEP 135 Skill and Analysis of Basketball and Volleyball 1 cr~~

~~PEP 136 Skill and Analysis of Soccer and Speedball 1 cr~~

## MOVEMENT SCIENCES

1. Add the following courses:

**PEP 418L Physiology of Exercise Laboratory (1 cr)**

Laboratory section for PEP 418. Study of the impacts of exercise on energy metabolism, the cardiovascular system, and skeletal muscle.

**Prereq:** MVSC 201, Biol 120 and Biol 121; or Permission

**Coreq:** PEP 418

**Rec 231 Alpine Skiing (1 cr)**

Intro to skills of alpine skiing including ski instruction and tactics in various terrain, equipment selection, and waxing. One 2-day field trip.

**Rec 411 Expedition Planning & Management (3 cr)**

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.

**Prereq or Coreq:** Rec 107

2. Add and joint-list the following courses:

**Dan (s) J116/J216/J416/J516 Technique (1 cr, max arr)**

Theory and techniques in ballet, modern, jazz, and other idioms. DAN 216 (intermediate) or 416 (advanced) courses are designed for dance majors and minors. DAN 116 courses are for non-majors/minors, often meeting jointly with 216 or 416 courses. Additional requirements for 216/416 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 (116, 216, 416, and 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 (s) 516 Technique (1 cr, max arr)**

See Dan J116/J216/J416/J516.

3. Change the following courses:

**Dan 105 (s) Dance (1 cr, max arr)**

~~Non-major and non-minor dance classes:~~ [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.). ~~Intermediate and advanced level students take~~ [Courses above a beginning level may require](#) placement session [or assessment by instructor](#) to determine the correct [technique/course](#) level. Two-~~three~~ [hours](#) per [week](#). ~~Graded~~ Pass/Fail. [Cooperative: open to WSU degree-seeking students.](#)

**Dan 216 (s) Techniques (1 cr, max arr)**

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~~See Dan J116/J216/J416/J516. For majors and minors. Theory and techniques in ballet, modern, jazz, and other idioms. Intermediate and advanced level students take placement session to determine the correct level. Two to three hrs a wk.~~

### **Dan 416 (s) ~~Advanced~~ Technique (1 cr, max arr)**

~~See Dan J116/J216/J416/J516. For majors and minors. Advanced techniques and theory in ballet, modern, jazz, and other idioms. Two to three hrs a wk in preprofessional technique classes.~~

### **AT 542 ~~Scientific Inquiry and Research Presentation (4)3 cr)~~**

~~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. 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 625 ~~Dissertation of Clinical Practice Improvement: Analysis and Dissemination of Action Research Project Scientific Writing for Publication in Patient Care (3 cr)~~**

~~This continues the process of action research in clinical practice. Data analysis of the student's research will be performed. Introduction to manuscript writing, dissemination of knowledge in written, oral and poster presentation and a focus on journal review will be the context for this course. Student will successfully present their findings and prepare manuscript in journal ready format. This course is a continuation of clinical research in healthcare and the completion of the Culminating Clinical Project (CCP).~~

~~Prereq: AT 620, AT 621, AT 622, AT 623, and AT 624~~

### **PEP 418 Physiology of Exercise (3)2 cr)**

~~Effects of physical activity on the circulatory, respiratory, and other systems. Two lec and one 2-hr lab a wk.~~

~~Prereq: MvSc 201, Biol 120 and Biol 121; or Permission~~

~~Coreq: PEP 418L~~

### **PEP 518 Advanced Physiology of Exercise (3 cr)**

~~Principles and methods essential to the experimental approach to physiological performance problems. Two lec and one lab a wk. 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 523 Physical Activity Assessment ~~and Enrichment (3 cr)~~**

~~This course is designed to focus learners on current research in physical activity assessment and enrichment research pedagogy with specific application to active travel, community, park, school site, and workplace pediatric physical activity measurement within school, community, private, and family physical activity programs.~~

### **Rec 229 Swiftwater Rescue Training (2 cr)**

~~This course utilizes the professional expertise and curriculum from the Swiftwater Safety Institute, a leader in swiftwater rescue training and promoter of industry safety standards. 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, quick, smooth, effective rescue technique.~~

~~Instruction requires three full days of practical field application for hands-on experience.~~

~~Prereq: Rec 107 and Rec 216; or equivalent experience with instructor permission~~

4. Drop the following courses:

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**AT 515 Research Proposal (3 cr)**

Students will submit a master’s project proposal with an authorized faculty mentor and will be approved by a faculty committee.

**AT 538 Advanced Human Biomechanics (3 cr)**

Advanced biomechanics theory and practice related to injury pathology and functional performance. (3 hours lecture)

5. Make the following curricular changes to the **Major in Athletic Training (M.S.A.T.)**:

The M.S.A.T. in Athletic Training requires the following courses:

AT 506	Clinical Anatomy I	3 cr
AT 507	Care and Prevention of Injuries and Illnesses	3 cr
AT 508	Evaluation and Diagnosis of Injuries and Illnesses I	4 cr
AT 509	Principles of Rehabilitation	3 cr
AT 510	Therapeutic Modalities	2 cr
AT 511	Ethics and Administration in Athletic Training	3 cr
AT 512	Research Methods & Statistics I	3 cr
AT 513	General Medicine for Athletic Trainers	3 cr
AT 514	Psychology of Injury and Referral	3 cr
<del>AT 515</del>	<del>Research Proposal</del>	<del>3 cr</del>
AT 520	Clinical Education I	2 cr
AT 521	Clinical Experience I	4 cr
AT 522	Clinical Education II	2 cr
AT 523	Clinical Experience II	4 cr
AT 531	Clinical Anatomy II	3 cr
AT 532	Evaluation and Diagnosis of Injuries and Illnesses II	4 cr
AT 533	Applied Rehabilitation Techniques	3 cr
AT 534	Therapeutic Modalities II	2 cr
AT 535	Seminar in Athletic Training	1 cr
AT 536	Research Methods & Statistics II	3 cr
<del>AT 538</del>	<del>Advanced Human Biomechanics</del>	<del>3 cr</del>
AT 540	Pharmacology for Athletic Trainers	3 cr
AT 541	Seminar in Athletic Training II	2 cr
AT 542	Research Presentation	1 cr
AT 543	Neuroscience for Athletic Trainers	3 cr
AT 547	Critical Issues in Athletic Training Clinical Practice	3 cr
AT 550	Clinical Education III	2 cr
AT 551	Clinical Experience III	4 cr
AT 552	Clinical Education IV	2 cr
AT 553	Clinical Experience IV	4 cr
AT 587	Prevention and Health Promotion in Athletic Training	3 cr

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.

6. Make the following curricular changes to the **Major in Exercise Science and Health (B.S.E.S.H.)**:

Required course work includes the university requirements (see regulation J-3), the Department of Movement Sciences core course MVSC 201, and the following.

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BIOL 120	Human Anatomy	4 cr
BIOL 121	Human Physiology	4 cr
COMM 101	Fundamntls Public Speaking	2 cr
FCS 205	Concepts in Human Nutrition	3 cr
H&S 245	Introduction to Athletic Injuries	3 cr
H&S 451	Psychosocial Determinants of Health	3 cr
PEP 100	Introduction to Exercise Science & Health	1 cr
PEP 300	Applied Human Anatomy and Biomechanics	3 cr
PEP 360	Motor Behavior	3 cr
PEP 418	Physiology of Exercise	3 cr
<a href="#">PEP 418L</a>	<a href="#">Physiology of Exercise Laboratory</a>	<a href="#">1 cr</a>
PEP 455	Design & Analysis of Research in Movement Sciences	3 cr
PEP 493	Fitness Assessment and Prescription	3 cr

One of the following tracks:

...

## COLLEGE OF ENGINEERING

### BIOLOGICAL ENGINEERING

1. Change the following course:

#### **BE 361 Transport Processes in Biological Systems (3 cr)**

~~Heat and mass transfer processes applied to analysis of biological systems and related equipment and processes.~~  
[The course will familiarize students with transport phenomena processes involved in bio-related fields spanning from agricultural to environmental and medical to pharmaceutical.](#)

**Prereq:** Engr 320 [and Engr 335](#), ~~Math-310~~

### CHEMICAL AND MATERIALS ENGINEERING

1. Add the following courses:

#### **CHE 440 Applied Mathematics in Chemical Engineering (3 cr)**

Mathematical approaches to modeling chemical behavior in transport, separation, reactor, and process systems.

**Prereq:** CHE 341 or permission

#### **CHE 455 Surfaces and Colloids (3 cr)**

Chemical and physical phenomena near material interfaces and behaviors of colloidal particles in dispersing media.

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**Prereq:** CHE 326 or CHEM 305 or permission

### **MSE 313L Physical Metallurgy Laboratory (1 cr)**

Metallographic principles and practices, hardness testing, structure-property correlations. One 2-hr lab per week.

**Prereq or Coreq:** MSE 313

2. Reactivate and change the following courses:

### **MSE J421/J521 Light Metals (3 cr)**

Principles behind the physical [and extractive](#) metallurgy of the light metals Al, Mg, Ti, Be; discussion of characteristics and applications of alloys based on these metals. Additional projects/assignments reqd for grad cr.

Recommended Preparation: MSE 313. ~~(Spring, Alt/yr)~~

### **MSE 521 Light Metals (3 cr)**

See MSE J421/J521.

3. Change the following course:

### **MSE 313 Physical Metallurgy (43 cr)**

Theory, structure, and properties of materials. (Fall only)

**Prereq:** MSE 201

4. Make the following curricular changes to the **Major in Materials Science and Engineering (B.S.M.S.E.)**:

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

CHEM 111	Principles of Chemistry I	4 cr
CHEM 112	Principles of Chemistry II	5 cr
CHEM 305	Physical Chemistry	3 cr
CHEM 307	Physical Chemistry Lab	1 cr
ENGL 317	Technical Writing	3 cr
ENGR 210	Engineering Statics	3 cr
ENGR 240	Introduction to Electrical Circuits	3 cr
ENGR 335	Engineering Fluid Mechanics	3 cr
ENGR 350	Engineering Mechanics of Materials	3 cr
MATH 170	Analytic Geometry and Calculus I	4 cr
MATH 175	Analytic Geometry and Calculus II	4 cr
MATH 275	Analytic Geometry and Calculus III	3 cr
MATH 310	Ordinary Differential Equations	3 cr
MSE 101	Introduction to Metallurgy and Materials Science	2 cr
MSE 201	Elements of Materials Science	3 cr
MSE 308	Thermodynamics of Materials	3 cr
MSE 313	Physical Metallurgy	43 cr
<a href="#">MSE 313L</a>	<a href="#">Physical Metallurgy Laboratory</a>	1 cr
MSE 340	Transport and Rate Processes I	4 cr
MSE 412	Mechanical Behavior of Materials	3 cr
MSE 413	Phase Transformation and Kinetics	3 cr
MSE 417	Instrumental Analysis	3 cr
MSE 423	Corrosion	3 cr
MSE 427	Ceramics Materials	3 cr
MSE 432	Fundamentals of Thin Film Fabrication	3 cr
MSE 434	Fundamentals of Polymeric Materials	3 cr
MSE 453	Process Analysis & Design I	3 cr

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MSE 454	Process Analysis & Design II	3 cr
MSE 456	Metallic Materials	3 cr
MSE 464	Materials Physics and Engineering	3 cr
PHIL 103	Ethics	3 cr
PHYS 211	Engineering Physics I	3 cr
PHYS 212	Engineering Physics II	3 cr
PHYS 212L	Laboratory Physics II	1 cr
STAT 301	Probability and Statistics	3 cr

## Chemical/Analysis Elective (3 cr):

<u>CHE 223</u>	<u>Material and Energy Balances</u>	<u>3 cr</u>
<u>CHEM 275</u>	<u>Carbon Compounds</u>	<u>3 cr</u>
<u>CHEM 277</u>	<u>Organic Chemistry I</u>	<u>3 cr</u>
<u>CHEM 306</u>	<u>Physical Chemistry</u>	<u>3 cr</u>
<u>ENGR 428</u>	<u>Numerical Methods</u>	<u>3 cr</u>

## ~~Computer Science Elective in a Programming Language (3 cr):~~

<del>CS</del>	<del>Computer Science Elective</del>	<del>3 cr</del>
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## Economics Elective (3 cr):

ECON	Economics Elective	3 cr
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## Humanities and Social Science Electives (6 cr):

Humanities and Social Science Electives	6 cr
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## MSE or CHE Technical Elective (3 cr):

MSE or CHE Elective	3 cr
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*Must be numbered 300 or greater.*

## Upper-Division Technical Elective (3 cr):

Technical Electives in Math, Science, or Engineering	3 cr
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*Must be numbered 300 or greater, excluding any 398, 498, or 598 Internship.*

**Courses to total 125 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.**

Students majoring in materials science and engineering must earn a grade of C or better in each of the following courses before registration is permitted in upper-division materials science and engineering courses: CHEM 111 and CHEM 112, ENGR 210 and ENGR 335, MATH 275 and MATH 310, MSE 201, and PHYS 211 and PHYS 212.

A passing grade is required in each of the following courses before registration is permitted in upper-division materials science and engineering courses: ~~computer science elective~~, ENGL 102, MATH 170 and MATH 175, and MSE 101.

Any student majoring in materials science and engineering may accumulate no more than four grades of D or F in UI mathematics, science, or engineering courses that are used to satisfy junior certification requirements. 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

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two grades of D or F in UI mathematics, science, or engineering courses used to satisfy curricular requirements.

An average GPA of at least 2.0 is required for all materials science and engineering courses used to satisfy the curricular requirements.

### CIVIL AND ENVIRONMENTAL ENGINEERING

1. Change the following courses:

#### **CE 460 Geotechnical Engineering Design (3 cr)**

Applications of soil mechanics in design of shallow and deep foundations, earth retaining structures, excavations, and soil exploration.

**Prereq:** CE 360; ~~and CE 441 or CE 444~~; or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

#### **CE 484 Engineering Law and Contracts (23 cr)**

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.

**Prereq:** Senior standing in engineering

2. Drop the following course:

#### **CE 482 Project Engineering (3 cr)**

Same as EM 482 and TM 482. 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. Computer applications are emphasized and appropriate software used throughout the course.

**Prereq:** ((Stat 251, Stat 301, or Equivalent) and Senior standing) or Permission. A minimum grade of 'C' or better is required for all pre/coreqs.

### COMPUTER SCIENCE

1. Add the following courses:

#### **CS (s) J431/J531 SFS Professional Development (1 cr)**

#### **CS (s) 531 SFS Professional Development (1 cr)**

#### **CS J444/J544 Supervisory Control and Critical Infrastructure Systems**

See ECE J444/J544.

#### **CS 544 Supervisory Control and Critical Infrastructure Systems (1 cr)**

See CS J444/J544.

#### **CS 543 Embedded Systems (3 cr)**

See CS J443/J543.

2. Reactivate the following course:

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### CS J424/J524 Advanced Computer Graphics (3 cr)

Graphical user interfaces; rendering for realism including shading, shadows and textures; fractals; raster displays, pixmaps, and antialiasing; 3D curves and surfaces; color theory; hidden surfaces; ray tracing; games. Additional work required for graduate credit. (Spring only)

**Prereq:** CS 324, Math 175

3. Reactivate and change the following course:

### CS 524 Advanced Computer Graphics (3 cr)

~~See CS J424/J524. Graphical user interfaces; rendering for realism including shading, shadows and textures; fractals; raster displays, pixmaps, and antialiasing; 3D curves and surfaces; color theory; hidden surfaces; ray tracing; games. (Spring only)~~

~~**Prereq:** CS 324, Math 175~~

4. Reactivate and joint-list the following course:

### CS J443/J543 Embedded Systems (3 cr)

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. (Fall only)

**Prereq:** CS 383

## ELECTRICAL AND COMPUTER ENGINEERING

1. Joint-list the following courses:

### ECE J444/J544 Supervisory Control and Critical Infrastructure Systems (3 cr)

~~Same as CS J444/J544.~~ 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/yrs.)

**Prereq:** Senior or Graduate standing in the College of Engineering

### ECE 544 Supervisory Control and Critical Infrastructure Systems (3 cr)

See ECE J444/J544.

2. Change the following courses:

### ECE 452 Communication Systems (3 cr)

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/yrs)

**Prereq:** ECE 450 and (STAT 301 or MATH 451)

### ECE 480 EE Senior Design I (3 cr)

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.

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**Prereq:** ECE 240, ECE 241, ECE 310, ECE 311, ECE 320, ECE 321, ECE 330, ECE 331, ECE 340, ECE 341, ECE 350, [and ECE 351](#) ~~and Stat 301~~; or Permission

**Coreq:** [STAT 301](#)

## **ECE 481 EE Senior Design II (3 cr)**

Gen Ed: 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.

**Prereq:** ECE 480 [and STAT 301](#) or Permission

## **ECE 482 Computer Engineering Senior Design I (3 cr)**

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.

**Prereq:** CS 240, 270, ECE 240, 241, 310, 311, 340, 341, 350, [and 351](#), ~~and Stat 301~~, or Permission

**Coreq:** ECE 440 [and STAT 301](#)

## **ECE 483 Computer Engineering Senior Design II (3 cr)**

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.

**Prereq:** ECE 440 and 482 [and STAT 301](#); or Permission

### 3. Make the following curricular changes to the **Major in Computer Engineering (B.S.Comp.E.)**:

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

CHEM 111	Principles of Chemistry I	4 cr
COMM 101	Fundamentals Public Speaking	2 cr
CS 120	Computer Science I	4 cr
CS 121	Computer Science II	3 cr
CS 150	Computer Organization and Architecture	3 cr
CS 210	Programming Languages	3 cr
CS 240	Computer Operating Systems	3 cr
CS 270	System Software	3 cr
ECE 101	Foundations of Electrical and Computer Engineering	2 cr
ECE 210	Electrical Circuits I	3 cr
ECE 211	Electrical Circuits Lab I	1 cr
ECE 212	Electrical Circuits II	3 cr
ECE 213	Electrical Circuits II Lab	1 cr
ECE 240	Digital Logic	3 cr
ECE 241	Logic Circuit Lab	1 cr

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ECE 292	Sophomore Seminar	0 cr
ECE 310	Microelectronics I	3 cr
ECE 311	Microelectronics I Lab	1 cr
ECE 340	Microcontrollers	3 cr
ECE 341	Microcontrollers Lab	1 cr
ECE 350	Signals and Systems I	3 cr
ECE 351	Signals and Systems I Lab	1 cr
ECE 440	Digital Systems Engineering	3 cr
ECE 482	Computer Engineering Senior Design I	3 cr
ECE 483	Computer Engineering Senior Design II	3 cr
ECE 491	Senior Seminar	0 cr
ENGL 317	Technical Writing	3 cr
MATH 170	Analytic Geometry and Calculus I	4 cr
MATH 175	Analytic Geometry and Calculus II	4 cr
MATH 176	Discrete Mathematics	3 cr
MATH 310	Ordinary Differential Equations	3 cr
MATH 330	Linear Algebra	3 cr
PHYS 211	Engineering Physics I	3 cr
PHYS 211L	Laboratory Physics I	1 cr
PHYS 212	Engineering Physics II	3 cr
PHYS 212L	Laboratory Physics II	1 cr
STAT 301	Probability and Statistics	3 cr

### Technical Electives (15 cr):

Technical Electives 15 cr

*Selected from upper-division computer engineering, electrical engineering, and computer science courses.*

### One of the following (3 cr):

AMST 301	Studies in American Culture	3 cr
PHIL 103	Ethics	3 cr

### One of the following (3-4 cr):

ECON 201	Principles of Macroeconomics	3 cr
ECON 202	Principles of Microeconomics	3 cr
ECON 272	Foundations of Economic Analysis	4 cr

**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: CHEM 111, CS 120, ECE 210, ECE 211, ECE 212, ECE 213, ECE 240 and ECE 241; MATH 170, MATH 175, and MATH 310; and PHYS 211, PHYS 211L, PHYS 212, and PHYS 212L. ~~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 engineering courses: ECE 210, ECE 212, ECE 240, ECE 241, MATH 170, MATH 175, MATH 310, PHYS 211, and PHYS 212.~~ 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: Before registration is permitted in 200-level CS courses students majoring in computer engineering must earn a grade of C or better in CS 120, CS 121 and CS 150 and MATH 176. ~~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: CS 210, CS 240, CS 270, and MATH 170, MATH 175, and MATH 176 for graduation and before registration is permitted in upper-division CS courses.~~

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[Students majoring in computer engineering must meet the college requirements for admission to classes \(see "Admission to Classes" under College of Engineering, part four\).](#)

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.

## ENGINEERING MANAGEMENT

1. Add the following course:

### **EM 550 Process Improvement Methods (3 cr)**

This course will examine a framework for delivering dramatic and sustained continuous improvement results through the integration of improvement methodologies such as Lean Six Sigma and Design for Lean Six Sigma (DFLSS).

2. Change the following course:

### **EM 560 Project Risk Management (3 cr)**

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.

**Prereq:** ~~EM 510 or TM 510~~; or Instructor Permission

3. Drop the following courses:

### **EM 482 Project Engineering (3 cr)**

See CE 482.

### **EM 486 Software-Assisted Project Management (3 cr)**

Characteristics and features of project management; procedures and techniques used in identifying software features that are necessary for recording project plans and for reporting project progress; process of selecting project management software that is consistent with the organization's procedures and requirements; evaluation of the modeling capabilities of a system in estimating and scheduling specific case studies of engineering projects. Two lec and 3 hrs of lab a wk.

**Prereq:** CE 482 or PMP Certification

### **EM 515 (s) Advanced Topics in Engineering Management (2-9 cr, max 9)**

Same as TM 515. Advanced topics in Engineering Management and Technology Management.

**Prereq:** Instructor Permission

## INDUSTRIAL TECHNOLOGY

1. Add the following course:

### **INDT 474 Mechatronics Systems (3 cr)**

Mechatronics is a multi-disciplinary engineering discipline representing a synergistic combination of mechanical, electrical, control, and computer engineering, integrated through a design process. The course provides a cross-disciplinary study of mechatronics systems at a theoretical and practical level. The emphasis is on a balanced approach to: (1) theoretical and analytical understanding of the fundamentals of mechatronics system design, and (2) practical implementation of learned concepts. Software and hardware simulation and interfacing is studied and reinforced through a set of assignments, lab exercises, and a project, based on the Lego Mindstorms EV3 kit.

**Prereq:** INDT 333 or permission

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2. Change the following courses:

**INDT 411 ~~Facility Fire Hazard Management~~ Fire and Life Safety 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~~ Engineering 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

## MECHANICAL ENGINEERING

1. Add the following course:

**ME 416 FE Exam Review (1 cr)**

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

**Prereq:** Senior Standing

2. Make the following curricular changes to the **Minor in Mechanical Engineering**:

<del>ENGR 105</del>	<del>Engineering Graphics</del>	<del>2 cr</del>
ENGR 210	Engineering Statics	3 cr
ENGR 220	Engineering Dynamics	3 cr
ME 123	Introduction to Mechanical Design	3 cr
<u>*or equivalent introductory engineering/science course</u>		
ME 223	Mechanical Design Analysis	3 cr

Four courses~~Courses~~ selected from the following (9/12 cr):

~~(Including at least 6 cr from ME courses)~~

ENGR 320	Engineering Thermodynamics and Heat Transfer	3 cr
	<u>OR</u>	
<u>ME 322</u>	<u>Mechanical Engineering Thermodynamics</u>	<u>3 cr</u>
ENGR 335	Engineering Fluid Mechanics	3 cr
ENGR 350	Engineering Mechanics of Materials	3 cr
<u>ME 301</u>	<u>Computer Aided Engineering</u>	<u>3 cr</u>
ME 313	Dynamic Modeling of Engineering Systems	3 cr
<u>ME 330</u>	<u>Experimental Methods for Engineers</u>	<u>3 cr</u>
<u>ME 410</u>	<u>Principles of Lean Manufacturing</u>	<u>3 cr</u>

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<del>ME 325</del>	<del>Machine Component Design I</del>	<del>3 cr</del>
<del>ME 345</del>	<del>Heat Transfer</del>	<del>3 cr</del>
<u>MSE 201</u>	<u>Elements of Materials Science</u>	<u>3 cr</u>
	<u>Other technical electives as approved by the department chair</u>	

Courses to total **23 credits** for this minor

3. Make the following curricular changes to the **Major in Mechanical Engineering (B.S.M.E.)**:

Required course work includes the university requirements (see regulation J-3), completion of the Fundamentals of Engineering (FE) examination and:

<del>CE 411</del>	<del>Engineering Fundamentals</del>	<del>1 cr</del>
CHEM 111	Principles of Chemistry I	4 cr
COMM 101	Fundamentals Public Speaking	2 cr
ENGL 317	Technical Writing	3 cr
ENGR 210	Engineering Statics	3 cr
ENGR 220	Engineering Dynamics	3 cr
ENGR 240	Introduction to Electrical Circuits	3 cr
ENGR 335	Engineering Fluid Mechanics	3 cr
ENGR 350	Engineering Mechanics of Materials	3 cr
MSE 201	Elements of Materials Science	3 cr
MATH 170	Analytic Geometry and Calculus I	4 cr
MATH 175	Analytic Geometry and Calculus II	4 cr
MATH 275	Analytic Geometry and Calculus III	3 cr
MATH 310	Ordinary Differential Equations	3 cr
MATH 330	Linear Algebra	3 cr
ME 123	Introduction to Mechanical Design	3 cr
ME 223	Mechanical Design Analysis	3 cr
ME 301	Computer Aided Design Methods	3 cr
ME 313	Dynamic Modeling of Engineering Systems	3 cr
ME 322	Mechanical Engineering Thermodynamics	3 cr
ME 325	Machine Component Design I	3 cr
ME 330	Experimental Methods for Engineers	3 cr
ME 341	Intermediate Mechanics of Materials	3 cr
ME 345	Heat Transfer	3 cr
<u>ME 416</u>	<u>FE Exam Review</u>	<u>1 cr</u>
ME 424	Mechanical Systems Design I	3 cr
ME 426	Mechanical Systems Design II	3 cr
ME 430	Senior Lab	3 cr
ME 435	Thermal Energy Systems Design	3 cr
PHIL 103	Ethics	3 cr
PHYS 211	Engineering Physics I	3 cr
PHYS 211L	Laboratory Physics I	1 cr
PHYS 212	Engineering Physics II	3 cr
PHYS 212L	Laboratory Physics II	1 cr

**One from the following (3-4 cr):**

ECON 201	Principles of Macroeconomics	3 cr
ECON 202	Principles of Microeconomics	3 cr
ECON 272	Foundations of Economic Analysis	4 cr

**Technical Elective requirements for Mechanical Engineering (15 cr):**

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Fifteen credits of technical electives are required from the list below. 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 in below:

ENTR 414	Entrepreneurship	3 cr
<a href="#">OM 378</a>	<a href="#">Project Management</a>	<a href="#">3 cr</a>
<a href="#">OM 439</a>	<a href="#">Systems &amp; Simulations</a>	<a href="#">3 cr</a>
OM 456	Quality Management	3 cr
ENGR 360	Engineering Economy	2 cr
MATH 371	Mathematical Physics	3 cr
MATH 420	Complex Variables	3 cr
MATH 428	Numerical Methods	3 cr
MATH 432	Numerical Linear Algebra	3 cr
MATH 437	Mathematical Biology	3 cr
MATH 451	Probability Theory	3 cr
MATH 452	Mathematical Statistics	3 cr
MATH 453	Stochastic Models	3 cr
MATH 471	Introduction to Analysis I	3 cr
MATH 472	Introduction to Analysis II	3 cr
MATH 480	Partial Differential Equations	3 cr
ME 401	Engineering Team Projects	2-3 cr
ME 404	Special Topics	1-16 cr
ME 410	Principles of Lean Manufacturing	3 cr
ME 412	Gas Dynamics	3 cr
ME 413	Engineering Acoustics	3 cr
	OR	
ME 513	Engineering Acoustics	3 cr
ME 414	HVAC Systems	3 cr
	OR	
ME 514	HVAC Systems	3 cr
ME 417	Turbomachinery	3 cr
	OR	
ME 517	Turbomachinery	3 cr
ME 420	Fluid Dynamics	3 cr
	OR	
ME 520	Fluid Dynamics	3 cr
ME 421	Advanced Computer Aided Design	3 cr
ME 422	Applied Thermodynamics	3 cr
ME 423	Human Factors and Ergonomics in Product Design	3 cr
ME 425	Machine Component Design II	3 cr
ME 433	Combustion Engine Systems	3 cr
<a href="#">ME 436</a>	<a href="#">Sustainable Energy Sources &amp; Systems</a>	<a href="#">3 cr</a>
<a href="#">ME 438</a>	<a href="#">Sustainability &amp; Green Design</a>	<a href="#">3 cr</a>
	OR	
<a href="#">ME 538</a>	<a href="#">Sustainability &amp; Green Design</a>	<a href="#">3 cr</a>

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ME 444	Air Conditioning Engineering	3 cr
ME 450	Computational Fluid Dynamics OR	3 cr
ME 550	Computational Fluid Dynamics	3 cr
ME 451	Experimental Methods in Fluid Dynamics OR	3 cr
ME 551	Experimental Methods in Fluid Dynamics	3 cr
ME 452	TechVentures: High Technology Entrepreneurship OR	3 cr
ME 552	TechVentures: High Technology Entrepreneurship	3 cr
<a href="#">ME 458</a>	<a href="#">Finite Element Applications in Engineering</a> OR	<a href="#">3 cr</a>
<a href="#">ME 558</a>	<a href="#">Finite Element Applications in Engineering</a>	<a href="#">3 cr</a>
ME 461	Fatigue and Fracture Mechanics	3 cr
ME 464	Robotics: Kinematics, Dynamics, and Control OR	3 cr
ME 564	Robotics: Kinematics, Dynamics, and Control	3 cr
ME 472	Mechanical Vibrations	3 cr
ME 481	Control Systems	3 cr
ME 490	Solid Modeling, Simulation and Manufacturing Capstone	3 cr
ME 519	Fluid Transients	3 cr
ME 521	Design Synthesis with Solid Modeling	3 cr
ME 525	Advanced Heat Transfer	3 cr
ME 529	Combustion and Air Pollution	3 cr
ME 539	Advanced Mechanics of Materials	3 cr
ME 540	Continuum Mechanics	3 cr
ME 541	Mechanical Engineering Analysis	3 cr
ME 544	Conduction Heat Transfer	3 cr
ME 546	Convective Heat Transfer	3 cr
ME 547	Thermal Radiation Processes	3 cr
ME 548	Elasticity	3 cr
ME 549	Finite Element Analysis	3 cr
ME 571	Building Performance Simulation for Integrated Design	3 cr
ME 578/CS 578/ECE 578	Neural Network Design	3 cr
ME 580	Linear System Theory	3 cr
ME 583/CE 541	Reliability of Engineering Systems	3 cr
PHYS 351	Introductory Quantum Mechanics I	3 cr
PHYS 305	Modern Physics	3 cr
PHYS 411	Advanced Physics Lab	4 cr
PHYS 425	Relativity OR	3 cr
PHYS 525	Relativity	3 cr
PHYS 428	Numerical Methods	3 cr

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	OR	
PHYS 528	Numerical Methods	3 cr
PHYS 443	Optics	3 cr
	OR	
PHYS 543	Optics	3 cr
PHYS 444	Quantum Optics	3 cr
	OR	
PHYS 544	Quantum Optics	3 cr
PHYS 464	Materials Physics and Engineering	3 cr
PHYS 465	Nuclear and Particle Physics	3 cr
	OR	
PHYS 565	Particle and Nuclear Physics	3 cr
PHYS 484	Astrophysics	3 cr
	OR	
PHYS 584	Astrophysics	3 cr
STAT 301	Probability and Statistics	3 cr
STAT 431	Statistical Analysis	3 cr
STAT 446/OM 446	Six Sigma Innovation	3 cr
	Any Approved 400/500 Level Course in another Engineering Discipline	

**A maximum of 6 credits of the following may be used:**

ME 307	Group Mentoring I	1 cr
ME 308	Group Mentoring II	1 cr
ME 401	Engineering Team Projects	2-3 cr
ME 407	Group Mentoring III	1 cr

**Courses to total 128 credits for this degree, not counting ENGL 101, MATH 143, and other courses that might be required to remove deficiencies.**

**NUCLEAR ENGINEERING**

1. Add the following course:

**NE 520 Thermodynamics of Nuclear Power Plants (3 cr)**

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.

**Prereq:** Permission

**TECHNOLOGY MANAGEMENT**

1. Add the following course:

**TM 517 Critical Infrastructure Security and Resilience Fundamentals (3 cr)**

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.

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2. Make the following curricular change to the **Critical Infrastructure Resilience Graduate Certificate**:

<del>TM 504</del>	<del>Special Topics</del>	<del>1-16 cr</del>
<u>TM 517</u>	<u>Critical Infrastructure Security and Resilience Fundamentals</u>	<u>3 cr</u>

**Electives Group 1 (6 cr):**

CS 536	Advanced Information Assurance Concepts	3 cr
ECE 469	Resilient Control of Critical Infrastructure	3 cr
INDT 470	Homeland Security	3 cr
INDT 472	National Incident Management Systems	3 cr
TM 529	Risk Assessment	3 cr
TM 516	Nuclear Rules and Regulations	3 cr

**Electives Group 2 (3 cr):**

CHE 445	Digital Process Control	3 cr
CS 452	Real-Time Operating Systems	3 cr
ECE 340	Microcontrollers	3 cr
ECE 443	Distributed Processing and Control Networks	3 cr
ECE 444	Supervisory Control and Critical Infrastructure Systems	3 cr
ECE 470	Control Systems	3 cr
ECE 477	Digital Process Control	3 cr
INDT 333	Industrial Electronics and Control Systems	3 cr
ME 481	Control Systems	3 cr
TM 514	Nuclear Safety	3 cr

**Electives Groups 3 (3 cr):**

CS 438	Network Security	3 cr
CS 439	Applied Security Concepts	3 cr
CS 447	Computer and Network Forensics	3 cr

**Courses to total 15 credits for this certificate**

**COLLEGE OF LETTERS, ARTS AND SOCIAL SCIENCES**

**PROGRAM IN AMERICAN INDIAN STUDIES**

1. Add the following courses:

**AIST 110 Community Building (1 cr)**

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 cr)**

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 210 Native Identities (3 cr)**

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.

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## AIST 244 (s) Tribal Elders Series (3 cr, max 9)

This course is intended to share information from the neighboring tribes surrounding the University of Idaho. Elders from these communities 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.

## AIST 412 Tribal Governance (3 cr)

This course is intended to impart an understanding of the vitality and rich diversity of contemporary American Indian societies, their histories, and their literatures, e.g., in the arts and expressive culture, governmental affairs both indigenous and external, economics, ecological relations and natural resources, health care, and family, social and religious life, oral traditions, world views and cultural values. This understanding is inclusive of both indigenous cultural and contact-historical expressions. An understanding of Tribal sovereignty and its varied meanings is key to this outcome.

**Prereq:** AIST 210

2. Change the following course:

## AIST 344 Indigenous ~~Epistemologies~~ **Ways of Knowing/Knowledge Systems** (3 cr)

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.

3. Make the following curricular changes to the **American Indian Studies Minor**:

AIST 314	Tribal Sovereignty and Federal Policy	3 cr
AIST 344	Indigenous Epistemologies	3 cr
AIST 422/ ANTH 422	Plateau Indians	3 cr

### Elective courses selected from the following (9 cr):

<a href="#">AIST 110</a>	<a href="#">Community Building</a>	<a href="#">1 cr</a>
<a href="#">AIST 111</a>	<a href="#">Intro to Success</a>	<a href="#">1 cr</a>
<a href="#">AIST 204</a>	<a href="#">Special Topics</a>	<a href="#">1-16 cr</a>
<a href="#">AIST 210</a>	<a href="#">Native Identities</a>	<a href="#">3 cr</a>
<a href="#">AIST 244</a>	<a href="#">Tribal Elder Series</a>	<a href="#">3 cr</a>
AIST 320	Native American & Indigenous Film	3 cr
<a href="#">AIST 400</a>	<a href="#">Seminar</a>	<a href="#">1-16 cr</a>
<a href="#">AIST 401</a>	<a href="#">Contemporary American Indian Issues</a>	<a href="#">3 cr</a>
<a href="#">AIST 403</a>	<a href="#">Workshop</a>	<a href="#">1-16 cr</a>
<a href="#">AIST 404</a>	<a href="#">Special Topics</a>	<a href="#">1-16 cr</a>
AIST 411	Native American Architecture	3 cr
<a href="#">AIST 412</a>	<a href="#">Tribal Governance</a>	<a href="#">3 cr</a>
AIST 420	Native American Law	3 cr
AIST 421	Native American Natural Resource Law	3 cr
AIST 426/	Red Earth White Lies: American Indian History 1840-Present	3 cr

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HIST 426		
AIST 431/ HIST 431	Stolen Continents, The Indian Story: Indian History to 1840	3 cr
AIST 478	Tribal Nation Economics and Law	3 cr
AIST 498	Internship	1-16 cr
AIST 499	Directed Study	1-16 cr
ANTH 329	North American Indians	3 cr
ANTH 436	North American Prehistory	3 cr
ANTH 443	Plateau Prehistory	3 cr
ENGL 484	American Indian Literature	3 cr
NEZP 101	Elementary Nez Perce I	4 cr
NEZP 102	Elementary Nez Perce II	4 cr
SOC 427/ ANTH 427	Racial and Ethnic Relations	3 cr

**Courses to total 18 credits for this minor**

**ENGLISH**

1. Add the following courses:

**ENGL 290 Introduction to Creative Writing (3 cr)**

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 382 Queer Literature (3 cr)**

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.

**Prereq:** Engl 102

2. Make the following curricular changes to the **Major in English, Creative Writing Emphasis (B.A.)**:

**Foundations (3 cr):**

ENGL 215	Introduction to English Studies	3 cr
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**Literary History (12 cr):**

ENGL 257	Literature of Western Civilization	3 cr
	OR	
ENGL 258	Literature of Western Civilization	3 cr
ENGL 345	Shakespeare	3 cr
	OR	
	A 400-Level English Literature Course before 1800	3 cr

**Two courses from the following (6 cr):**

ENGL 341	Survey of British Literature	3 cr
ENGL 342	Survey of British Literature	3 cr
ENGL 343	Survey of American Literature	3 cr
ENGL 344	Survey of American Literature	3 cr

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**Genre Craft/Workshop Courses (18 cr):**

(Students must take ~~a full numerical sequence in their major genre (ex. 291/391/491), plus two additional creative writing courses in a sequence in one other genre for a minor genre and either a beginning writing course in a third genre or an advanced writing course in the minor genre.~~)

ENGL 290      Introduction to Creative Writing      3 cr

And then a full numerical sequence in two genres (ex. 391 and 491; plus 392 and 492), and at least one intermediate course in a third genre (ex. 393) (15 cr):

<del>ENGL 291</del>	<del>Beginning Poetry Writing</del>	<del>3 cr</del>
<del>ENGL 292</del>	<del>Beginning Fiction Writing</del>	<del>3 cr</del>
<del>ENGL 293</del>	<del>Beginning Nonfiction Writing</del>	<del>3 cr</del>
ENGL 391	Intermediate Poetry Writing	3 cr
ENGL 392	Intermediate Fiction Writing	3 cr
ENGL 393	Intermediate Nonfiction Writing	3 cr
ENGL 491	Advanced Poetry Writing	3 cr
ENGL 492	Advanced Fiction Writing	3 cr
ENGL 493	Advanced Nonfiction Writing	3 cr

**Cultural Diversity (3 cr):**

(One course in non-canonical or underrepresented literatures)

ENGL 380	Introduction to U.S. Ethnic Literatures	3 cr
<u>ENGL 382</u>	<u>Queer Literature</u>	<u>3 cr</u>
ENGL 481	Women's Literature	3-6 cr - Max 98 cr
ENGL 483	African American Literature	3 cr
ENGL 484	American Indian Literature	3 cr

*Or an advisor-approved special topics or extra-departmental course (3cr)*

**Electives (3 cr):**

One 400-Level Literature Course	3 cr
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**Electives (3 cr):**

Additional 400-Level Literature Course	3 cr
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*Engl 322, Engl 375, or Engl 380 may be used with advisor approval.*

**Capstone (3 cr):**

ENGL 490      Senior Seminar	3 cr
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**Courses to total 120 credits for this degree**

3. Make the following changes to the **Major in English (M.A.)**:

**Thesis and Non-Thesis Options:**

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 "Graduate Handbook for Theses and Dissertations."

The non-thesis option requires 30 credits of coursework and 3 research 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.

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For both 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 his or her work articulately with respect to research methodology, critical perspective, and applicability to related work in the area.

Students and their major professors and committees will design their programs.

Theses or papers may address topics in literature and literary theory and criticism or composition and rhetorical theory.

~~Candidates for the master's degree in English are required to demonstrate reading proficiency in one of the following languages: French, German, Italian, Latin, Classical Greek, Spanish, or Russian.~~

**INTERNATIONAL STUDIES**

1. Add the following courses:

**IS 225 International Environmental Issues Seminar (3 cr)**

See Envs 225.

**IS 384 African Politics (3 cr)**

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 441 International Protection of Human Rights (3 cr)**

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.

2. Make the following curricular changes to the **Major in International Studies (B.A.)**:

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

IS 310	The United Nations	3 cr
IS 410	NGOs in the International System	3 cr
IS 495	International Studies Senior Seminar	3 cr
STAT 251	Statistical Methods	3 cr

**One of the following groups of courses (4-6 cr):**

ECON 201	Principles of Macroeconomics	3 cr
ECON 202	Principles of Microeconomics	3 cr

OR

ECON 272	Foundations of Economic Analysis	4 cr
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**One of the following (3 cr):**

GEOG 260	Introduction to Geopolitics	3 cr
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POLS 205	Introduction to Comparative Politics	3 cr
POLS 237	Introduction to International Politics	3 cr

## Six credits chosen from:

ANTH 220	Peoples of the World	3 cr
ENGL 485	Global Literatures in English	3 cr - Max 6 cr
ENVS 225	International Environmental Issues Seminar	3 cr
GEOG 200	World Regional Geography	3 cr
IS 195	International Studies Freshman Seminar	3 cr
JAMM 490	Global Media	3 cr
SOC 350	Food, Culture, and Society	3 cr

At least 12 cr from one of the following issue emphases: international relations, international economics and business, global resources and development (see courses below). This requirement may be waived by completion of a relevant second major with approval from the program director.

At least 12 cr from one of the following regional emphases: ~~Latin America and the Caribbean, Europe, Asia (see courses below)~~ [Africa, Asia, Europe, Latin America and the Caribbean, and North America. Courses must be approved by the student's departmental advisor.](#)

## Modern Foreign Language Proficiency (0-22 cr)

Demonstrated proficiency in a modern foreign language correlating with the region of emphasis and equivalent to that gained from six semesters of university study. ~~Exceptions include any class taught in English. Primary instruction in any class counting towards this requirement must be in the target language. (0-22 cr)~~

## International Experience

In addition, 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, be qualified for at least 12 credits, 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.

## Issue Emphases in International Studies

Recommended courses for completion of requirement (special topic courses may be used when approved by the director).

### A. International Relations

GEOG 365	Political Geography	3 cr
HIST 430	U.S. Diplomatic History	3 cr
IS 320	Model United Nations	2 cr
IS 321	UN and Related Agencies	1 cr
IS 350	Sports and International Affairs	3 cr

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POLS 338	American Foreign Policy	3 cr
POLS 440	International Organizations & International Law	3 cr
POLS 449	World Politics and War	3 cr
POLS 487	Political Violence and Revolution	3 cr
SOC 335	Terrorism, Society and Justice	3 cr

## B. International Economics and Business

AGEC 481	Agricultural Markets in a Global Economy	3 cr
FIN 381	International Finance	3 cr
MKTG 482	International Marketing	3 cr
ECON 446	International Economics	3 cr
ECON 447	International Development Economics	3 cr
GEOG 345	Global Economic Geography	3 cr
IS 323	International Monetary and Trade Organizations	3 cr

## C. Global Resources and Development

AGEC 481	Agricultural Markets in a Global Economy	3 cr
ANTH 462	Human Issues in International Development	3 cr
FCS 411	Global Nutrition	3 cr
FS 436	Principles of Sustainability	3 cr
GEOG 313	Global Climate Change	3 cr
GEOG 350	Geography of Development	3-4 cr - Max 4 cr
GEOG 360	Population Dynamics and Distribution	3-4 cr - Max 4 cr
GEOG 409	Rural Development	3 cr
IS 322	International Environmental Organizations	3 cr
NRS 493	International Land Preservation and Conservation Systems	3 cr
POLS 480	Politics of Development	3 cr
SOC 340	Social Change & Globalization	3 cr

## Regional Emphases in International Studies

### A. Latin America and the Caribbean

<del>FLEN 394</del>	<del>Latin American Literature in Translation</del>	<del>3 cr</del>
<del>HIST 438</del>	<del>Modern Mexico and the Americas</del>	<del>3 cr</del>
<del>HIST 439</del>	<del>Modern Latin America</del>	<del>3 cr</del>
<del>HIST 440</del>	<del>Social Revolution in Latin America</del>	<del>3 cr</del>
<del>SPAN 306</del>	<del>Culture and Institutions of Latin America</del>	<del>3 cr</del>
<del>SPAN 402</del>	<del>Readings: Spanish American Literature</del>	<del>3 cr</del>
<del>SPAN 413</del>	<del>Spanish American Short Fiction</del>	<del>3 cr</del>

### B. Europe

<del>ENGL 342</del>	<del>Survey of British Literature</del>	<del>3 cr</del>
<del>FLEN 307</del>	<del>Institutions of the European Union</del>	<del>3 cr</del>
<del>FLEN 308</del>	<del>European Immigration and Integration</del>	<del>3 cr</del>
<del>FLEN 313</del>	<del>French/Francophone Literature in Translation</del>	<del>3 cr</del>
<del>FLEN 324</del>	<del>Topics in German Literature in Translation</del>	<del>3 cr - Max 6 cr</del>
<del>FREN 304</del>	<del>Connecting French Language and Culture</del>	<del>3 cr</del>
<del>FREN 407</del>	<del>French &amp; Francophone Literatures</del>	<del>3 cr - Max 9 cr</del>
<del>FREN 408</del>	<del>French and Francophone Culture and Institutions</del>	<del>3 cr - Max 9 cr</del>
<del>GERM 420</del>	<del>Topics in German Culture &amp; Literature—Themes</del>	<del>3 cr - Max 6 cr</del>
<del>HIST 350</del>	<del>The Age of Enlightenment: European Culture &amp; Ideas, 1680-1800</del>	<del>3 cr</del>
<del>HIST 366</del>	<del>Modern European Cultural and Intellectual History, 1880-1980</del>	<del>3 cr</del>
<del>HIST 447</del>	<del>The Renaissance</del>	<del>3 cr</del>

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HIST 452	Europe in the Age of the Revolution, 1770-1880	3-cr
HIST 455	Modern Europe	3-cr
HIST 466	Eastern Europe Since 1774	3-cr
HIST 467	Russia to 1894	3-cr
HIST 468	Russia and Soviet Union Since 1894	3-cr
POLS 381	European Politics	3-cr
SPAN 305	Culture and Institutions of Spain	3-cr
SPAN 401	Readings: Spanish Literature	3-cr
C. Asia/Africa		
FLEN 331	Japanese Anime	3-cr
HIST 331	The Age of African Empires	3-cr
HIST 457	History of the Middle East	3-cr
HIST 481	America's Wars in Asia	3-cr
HIST 482	Japan, 1600 to Present	3-cr
HIST 484	Modern China, 1840s to Present	3-cr
HIST 485	Chinese Social and Cultural History	3-cr
IS 325	The Contemporary Muslim World	3-cr
IS 326	Africa Today	3-cr
PHIL 307	Buddhism	3-cr
POLS 420	Introduction to Asian Politics	3-cr

## Courses to total 120 credits for this degree

Other courses with an international component may be used as electives with permission of the program director.

## JOURNALISM AND MASS MEDIA

1. Add the following courses:

### JAMM 446 Women in the Media (3 cr)

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).

Prereq: 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 491 Multimedia Storytelling Abroad (3 cr)

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.

Prereq: Permission

2. Change the following courses:

### JAMM 323 ~~Broadcast~~ Sports Reporting (3 cr, ~~max 6~~)

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. (Fall only)

Prereq: JAMM 100, JAMM 121, and JAMM 122 with grades of 'C' or better; and JAMM 225 ~~and~~ or JAMM 275; or Permission

3. Make the following changes to the **Journalism and Mass Media Undergraduate Curricular Requirements:**

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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.

A student may not double major in the School of Journalism and Mass Media.

Courses required in all majors in the School of Journalism and Mass Media:

COMM 101	Fundamentals Public Speaking	2 cr
JAMM 100	Media and Society	3 cr
JAMM 121	Media Writing	3 cr
JAMM 122	Multimedia Storytelling	1 cr
JAMM 341	Mass Media Ethics	3 cr
JAMM 448	Law of Mass Media	3 cr

**Two of the following courses:**

JAMM 339	Crime and the Media	3 cr
JAMM 340	Cultural Diversity and the Media	3 cr
JAMM 378	American Television Genres	3 cr
JAMM 379	Hollywood Portrayals of Journalists	3 cr
JAMM 426	Narrative Journalism	3 cr
JAMM 440	Critical Issues in Mass Media	3 cr
<a href="#">JAMM 446</a>	<a href="#">Women in the Media</a>	<a href="#">3 cr</a>
JAMM 443	Media Management and Economics	3 cr
JAMM 444	Mass Media and Public Opinion	3 cr
JAMM 445	History of Mass Media	3 cr
JAMM 465	Political Advertising	3 cr
JAMM 477	Documentary Film	3 cr
JAMM 490	Global Media	3 cr

**Electives in Journalism and Mass Media (6 cr):**

JAMM	Electives in Journalism and Mass Media	6 cr
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*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.*

4. Make the following curricular changes to the **Major in Film & Television Studies** (B.A. or B.S.):

*Note:* Students must have a 2.5 GPA to major and must attain a 2.5 GPA to graduate with the Film and Television Studies degree.

*Prerequisite:* ENGL 230 must be completed with a 'C' or above before enrolling in other courses in the sequence.

Film and Television Studies 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 film making. 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 course work includes the university requirements (see regulation J-3), the CLASS requirements for the B.A. or B.S. degree, and:

ENGL 221	History of Film 1895-1945	3 cr
ENGL 222	History of Film 1945-Present	3 cr
ENGL 230	Introduction to Film Studies	3 cr

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ENGL 231	Introduction to Screenwriting	3 cr
JAMM 275	Introduction to Broadcasting and Digital Media Production	4 cr

## Additional Production (5 cr):

ENGL 446	Foundations of Screenwriting	3 cr
JAMM 374	Digital Media Field Production	3 cr
JAMM 473	Lighting for Digital Media Production	1 cr
JAMM 474	Video Editing	1 cr

## History Culture and Theory (6 cr):

*3 credits of which must be in under-served, non-canonical, or international film, reflecting cultural diversity (\*):*

AIST 320	Native American & Indigenous Film	3 cr
ENGL 420	Literature and Film	3 cr - Max 6 cr
ENGL 432	Film Theory and Criticism	3 cr
ENGL 477	Documentary Film	3 cr
FLEN 315	French/Francophone Cinema in Translation	3 cr
<a href="#">FLEN 323</a>	<a href="#">German Culture Through Film</a>	<a href="#">3 cr</a>
FLEN 326	Chinese Cinema in Translation	3 cr
FLEN 331	Japanese Anime	3 cr
FLEN 390	Representation and Reality in Spanish Cinema	3 cr
FLEN 391	Hispanic Film	3 cr
FREN 419	French & Francophone Cinema	3 cr
<a href="#">GERM 306</a>	<a href="#">German Film</a>	<a href="#">3 cr</a>
HIST 414	History and Film	3 cr - Max 6 cr
JAMM 339	Crime and the Media	3 cr
JAMM 378	American Television Genres	3 cr
JAMM 445	History of Mass Media	3 cr
SPAN 423	Gender and Identity in Spanish Cinema	3 cr
SPAN 424	Human Rights and Hispanic Cinema	3 cr

## Electives (12 cr):

*Students may also substitute other courses if approved by the director of the Film & Television Studies program.*

AIST 320	Native American & Indigenous Film	3 cr
ENGL 420	Literature and Film	3 cr - Max 6 cr
ENGL 432	Film Theory and Criticism	3 cr
ENGL 446	Foundations of Screenwriting	3 cr
ENGL 477	Documentary Film	3 cr
FLEN 315	French/Francophone Cinema in Translation	3 cr
<a href="#">FLEN 323</a>	<a href="#">German Culture Through Film</a>	<a href="#">3 cr</a>
FLEN 326	Chinese Cinema in Translation	3 cr
FLEN 331	Japanese Anime	3 cr
FLEN 390	Representation and Reality in Spanish Cinema	3 cr
FLEN 391	Hispanic Film	3 cr
FREN 419	French & Francophone Cinema	3 cr
<a href="#">GERM 306</a>	<a href="#">German Film</a>	<a href="#">3 cr</a>
HIST 414	History and Film	3 cr - Max 6 cr
JAMM 339	Crime and the Media	3 cr
JAMM 374	Digital Media Field Production	3 cr
JAMM 378	American Television Genres	3 cr
JAMM 379	Hollywood Portrayals of Journalists	3 cr

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JAMM 473	Lighting for Digital Media Production	1 cr
JAMM 474	Video Editing	1 cr
SPAN 423	Gender and Identity in Spanish Cinema	3 cr
SPAN 424	Human Rights and Hispanic Cinema	3 cr
<a href="#">THE 102</a>	<a href="#">Introduction to Design</a>	<a href="#">3 cr</a>
THE 105	Basics of Performance <a href="#">I</a>	3 cr
THE 106	Basics of Performance <a href="#">II</a>	3 cr
THE 201	Scene Design I	3 cr
THE 202	Costume Design I	3 cr
THE 205	Lighting Design I	3 cr
THE 305	Intermediate Acting <a href="#">I</a>	3 cr
THE 306	Intermediate Acting <a href="#">II</a>	3 cr
THE 410	Costume Design II	3 cr - Max 12 cr
THE 465	Advanced Scene Design	3 cr
THE 471	Directing	3 cr

### Senior Experience (6 cr):

JAMM 475	Advanced Digital Media Production	3 cr
JAMM 475	Advanced Digital Media Production	3 cr

**Courses to total 120 credits for this degree**

5. Make the following curricular changes to the **Major in Journalism** (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 225	Reporting I	3 cr
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### One of the following (3 cr):

JAMM 322	Broadcast News	3 cr
JAMM 327	Reporting II	3 cr

### Nine credits from this list:

JAMM 322	Broadcast News	3 cr
<a href="#">JAMM 323</a>	<a href="#">Sports Reporting</a>	<a href="#">3 cr</a>
JAMM 324	News Editing and Production	3 cr
JAMM 325	Publications Editing	3 cr
<del>JAMM 327</del>	<del>Reporting II</del>	<del>3 cr</del>
JAMM 328	Science Writing	3 cr
JAMM 422	Advanced Broadcast News	3 cr
JAMM 425	Feature Article Writing	3 cr
JAMM 428	Environmental Journalism	3 cr

**Courses to total 120 credits for this degree**

(Journalism majors are encouraged to pursue their studies across media, including print, broadcast and online journalism.)

## MODERN LANGUAGES AND CULTURES

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

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Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

An international experience (eight week minimum) and the course work listed below are required of students. This international experience requirement will be fulfilled by completing a MLC 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 MLC advisor and/or MLC Validation Committee appointed by MLC chair. Shorter international experiences exceptions can be considered by MLC Validation Committee in case of extraordinary financial or family circumstances.

The French Major consists of a minimum of 36 upper-division credits which must include the following:

- At least 9 FREN credits must be at the 400-level (9 cr)
- At least 9 credits must be completed on campus
- A maximum of 9 FLEN credits out of the 36 may be applied towards the major; the remaining credits must be in FREN
- A second foreign language (elem & interm or equivalent) (16 cr) [or a minor in International Studies \(18 cr\)](#)\*

Additionally, all majors must complete a 1-credit MLC capstone course based on their international experience and take the Avant's STAMP (STAndards-based Measurement of Proficiency) exit exam before applying for graduation.

\*Note: This requirement is waived for students with a double major (French plus another major)

### 2. Make the following curricular changes to the **Major in Spanish** (B.A.):

Required course work includes the university requirements (see regulation J-3), the general requirements for the B.A. degree, and:

An international experience (eight week minimum) and the course work listed below are required of students. This international experience requirement will be fulfilled by completing a MLC 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 MLC advisor and/or MLC Validation Committee appointed by MLC chair. Shorter international experiences exceptions can be considered by MLC Validation Committee in case of extraordinary financial or family circumstances.

The Spanish major consists of a minimum of 36 upper-division credits, which must include the following:

- SPAN 301, SPAN 302, SPAN 305, and SPAN 306
- At least 9 SPAN credits must be at the 400-level (9 cr)
- At least 9 credits must be completed on campus
- A maximum of 9 FLEN credits out of the 36 may be applied towards the major; the remaining must be in SPAN
- A second foreign language (elem & interm or equivalent) (16 cr) [or a minor in International Studies \(18 cr\)](#)\*

Additionally, all majors must complete a 1-credit MLC capstone course based on their international experience and take the Avant's STAMP (STAndards-based Measurement of Proficiency) exit exam before applying for graduation.

\*Note: This requirement is waived for students with a double major (Spanish plus another major)

## MUSIC

### 1. Change the following course:

#### **MusT 466 Marching Band Techniques (1 cr)**

Techniques of drilling; materials for field and street maneuvers; preparation of shows. (Fall only)

**Prereq:** MusC 142

**Prereq or Coreq:** MusA 119/MusA 319 ~~and MusT 383~~; or Permission

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2. Make the following curricular changes to the **Musical Theatre Minor**:

MUSA 114	Studio Instruction	1 cr
<i>4 cr required</i>		
MUSA 145	Piano Class for Music Majors/Minors	1 cr
MUSA 146	Piano Class for Music Majors/Minors	1 cr
MUSA <a href="#">180 or</a> 380	Opera/Musical Theatre Studio	1-3 cr
MUSC 139	Aural Skills I	2 cr
MUSC 140	Aural Skills II	2 cr
MUSC 141	Theory of Music I	2 cr
MUSH 330	History of Music Theatre	3 cr
THE 105	Basics of Performance	3 cr
THE 106	Basics of Performance	3 cr
THE 305	Intermediate Acting	3 cr

**Two courses from the following (2 cr):**

DAN 105	Dance	1 cr
DAN 216	Technique	1 cr
DAN 416	Advanced Technique	1 cr

**Courses to total 27 credits for this minor**

3. Make the following changes to the **Major in Music: Performance (B.Mus.)**:

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

MUSA 115	Studio Instruction	2 cr - Max 8 cr
MUSA 246	Piano Class for Music Majors/Minors	1 cr
MUSA 387	Conducting I	2 cr
MUSA 491	Recital	0 cr
MUSC 139	Aural Skills I	2 cr
MUSC 140	Aural Skills II	2 cr
MUSC 141	Theory of Music I	2 cr
MUSC 142	Theory of Music II	2 cr
MUSC 239	Aural Skills III	1 cr
MUSC 240	Aural Skills IV	1 cr
MUSC 241	Theory of Music III	3 cr
MUSC 242	Theory of Music IV	3 cr
MUSC 442	Musical Analysis	2 cr
MUSH 111	Introduction to Music Literature	3 cr
MUSH 321	Music in Western Civilization I	3 cr
MUSH 322	Music in Western Civilization II	3 cr
MUSH 323	Music in Western Civilization III	3 cr
MUSX 101	Orientation for Music Majors	0 cr
MUSX 140	Recital Attendance	0 cr

*Seven semesters required*

**And one of the following options:**

A. Keyboard Option

MUSA 134	Studio Instruction	3 cr
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*9 cr required*

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MUSA 315	Collaborative Piano	1 cr
<i>4 cr required</i>		
MUSA 334	Studio Instruction	3 cr
<i>12 cr required</i>		
MUSA 455	Keyboard Performance Practices	1 cr
MUSA 490	Half Recital	0 cr
MUSH 454	Keyboard Repertoire I	2 cr
MUSH 455	Keyboard Repertoire II	2 cr
MUST 436	Pedagogy and Materials: Keyboard I	2 cr
MUST 437	Pedagogy and Materials: Keyboard II	2 cr

**Jazz/Chamber Ensemble (2 cr):**

<a href="#">MUSA J123/J323</a>	<a href="#">Jazz Ensemble</a>	<a href="#">1 cr</a>
MUSA 365	Chamber Ensemble	1 cr
<i>2-cr required</i>		

**MusH Elective (3 cr):**

MUSH	MUSH Elective at the 400 Level	3 cr
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**Major Ensemble (2 cr):**

Two different semesters chosen from:

MUSA 116	Concert Choir--Vandaleers	1 cr - Max 98 cr
MUSA 316	Concert Choir--Vandaleers	1 cr
MUSA 117	University Chorus	1 cr
MUSA 317	University Chorus	1 cr
MUSA 119	Marching Band	1-3 cr
MUSA 319	Marching Band	1-3 cr
MUSA 121	Concert Band	1 cr
MUSA 321	Concert Band	1 cr
MUSA 122	Orchestra	1 cr - Max 98 cr
MUSA 322	Orchestra	1 cr
<a href="#">MUSA 120</a>	<a href="#">Wind Ensemble</a>	<a href="#">1 cr</a>
MUSA 320	Wind Ensemble	1 cr

**Music electives**

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To reach a total of 78 credits in Music  
 Courses to total 120 credits for this degree

**B. Instrumental Option**

MUSA 134	Studio Instruction	3 cr
<i>9 cr required</i>		
MUSA 245	Piano Class for Music Majors/Minors	1 cr
MUSA 490	Half Recital	0 cr
MUSA 334	Studio Instruction	3 cr
<i>12 cr required</i>		

**MusH Elective (3 cr):**

MUSH	MUSH Elective at the 400 Level	3 cr
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**Chamber music (2 cr):**

Two different semesters chosen from:

MUSA 323	Jazz Ensemble	1 cr
MUSA 365	Chamber Ensemble	1 cr
<del>MUSA 366</del>	<del>Orchestral Repertoire</del>	<del>1 cr</del>

~~MUSA 366: Maximum of one semester.~~

*Guitar Majors: 4 cr in four different semesters of MUSA 365 are required.*

**Major Ensemble (8 cr):**

Eight different semesters chosen from:

MUSA 121	Concert Band	1 cr
MUSA 321	Concert Band	1 cr
MUSA 122	Orchestra	1 cr - Max 98 cr
MUSA 322	Orchestra	1 cr
<a href="#">MUSA 120</a>	<a href="#">Wind Ensemble</a>	<a href="#">1 cr</a>
MUSA 320	Wind Ensemble	1 cr

*Guitar Majors: 4 cr in four different semesters required for guitar majors, who may also choose from MUSA 116/MUSA 316, MUSA 117/MUSA 317, MUSA 119/MUSA 319 [and 2 cr in two different semesters in any major ensemble or in MUSA 118/318, or MUSA 123/323.](#)*

**One of the following (2 cr):**

MUSH 450	Orchestral Literature	2 cr
MUSH 451	Repertoire	2 cr

*MUSH 450: Sax majors may take MUSH 410 in place of MUSH 450.*

**Music electives (5-6 cr):**

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Music Electives 5-6 cr

*To reach a total 78 cr in music.*

**Courses to total 120 credits for this degree**

**C. Vocal Option**

MUSA 134	Studio Instruction	3 cr
<i>9 cr required</i>		
MUSA 334	Studio Instruction	3 cr
<i>12 cr required</i>		
<a href="#">MUSA 180</a>	<a href="#">Opera/Musical Theatre Studio</a>	<a href="#">1-3 cr</a>
MUSA 380	Opera/Musical Theatre Studio	1-3 cr
<i>Two semesters required</i>		
MUSA 245	Piano Class for Music Majors/Minors	1 cr
MUSA 490	Half Recital	0 cr
MUSH 452	Solo Vocal Repertoire	2 cr
MUST 435	Pedagogy & Materials	2 cr
MUSX 283	English and Italian Diction for Singers	2 cr
MUSX 284	German and French Diction	2 cr

**Foreign Language (12 cr):**

Three semesters of French or German, or two semesters of French and one of German, or two semesters of German and one of French.

**MusH Elective (3 cr):**

MUSH	MUSH Elective at the 300 or 400 Level	3 cr
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**Major Ensemble (8 cr):**

Eight different semesters chosen from:

MUSA 116	Concert Choir--Vandaleers	1 cr - Max 98 cr
MUSA 316	Concert Choir--Vandaleers	1 cr
MUSA 117	University Choir	1 cr
MUSA 317	University Chorus	1 cr

**Music electives**

*To reach a total of 78 credits in Music.*

**Courses to total 120 credits for this degree**

4. Make the following curricular changes to the **General Requirements for all B.A., B.S., and B.Mus. Degrees:**

**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:

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1. have completed with a "C" or better, or be currently enrolled in [one semester of MUSA 115 Studio Instruction and three semesters of MUSA 124 or MUSA 134 Studio Instruction depending on the student's degree program](#), MUSC 242 Music Theory IV, MUSH 111 Introduction to Music Literature and the courses listed in one of the following scenarios: (A). MUSA 246 Class Piano and MUSC 240 Aural Skills IV; (B). MUSA 146 Class Piano and MUSC 240 Aural Skills IV; or (C). MUSA 246 Class Piano and MUSC 140 Aural Skills II
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).

Transfer students with at least two years of college study as a music major and double majors with one major outside of music may apply for UDS if they have at least one year of music theory, aural skills and piano, one semester of music history, four semesters of studio instruction at the music major level and the approval of the studio instructor or area coordinator in the case of voice and keyboard. An Upper Division Standing jury examination presented after the ~~second~~<sup>third</sup> week will not count towards the semester in which it was presented. Students who fail to pass the UDS requirements within ~~two~~<sup>three</sup> tries are ineligible to continue to pursue a music major.

~~In order to register for upper division music education courses (not including instrumental techniques courses), an undergraduate music education major must: (1) make application to upper division music education courses by completing and submitting an application form (available in the music office) to the chair of the Music Education Committee this should be done in the semester in which the student applies for upper division standing (UDS). If the student does not pass UDS, he/she must resubmit a music education application form; (2) successfully complete EDCI 201 and the necessary core courses to meet the requirements of the application to Teacher Education in the College of Education; (3) obtain a "C" or better in music courses and at least a 2.5 overall GPA; and (4) pass the studio instruction upper division standing jury.~~

**Diagnostic Exam in Theory and Aural Skills.** The goal of ~~these~~<sup>this</sup> exams, [required for all transfer students whose major is music](#), is to ~~place~~<sup>advise</sup> transfer students [in the appropriate level of music theory, aural skills, and piano according to their abilities regardless of](#) ~~regarding deficiencies in~~ their prior ~~theory~~ training; this exam is not available to ~~first-year students~~<sup>freshmen</sup>. ~~A~~<sup>S</sup>Study guides ~~are~~<sup>is</sup> available on the web. The exams ~~are~~<sup>is</sup> given during the first week of classes each semester, as needed. The exam will not be used for "advanced placement" or "credit by examination," as the regulations regarding these procedures are covered in regulation D-4. Written evaluation of each student's achievement will be placed in his or her advising file, and ~~the~~ students will be [admitted to required courses at their ability level](#)~~counseled appropriately~~.

## POLITICS AND PHILOSOPHY

1. Remove the following course from Dormancy:

### **PolS 557 Governmental Budgeting (3 cr)**

Theory and practice of budgeting in a political environment; focus on potentials and limitations of various budgeting systems, particular viz the federal experience.

2. Reactivate the following course and change its description:

### **Phil 405 Feminism and Philosophy (3 cr).**

~~Analysis of schools of feminist theory and impact of feminism on philosophy and other disciplines.~~ [An exploration of how feminist philosophies have brought to light gender bias in western philosophy and have \(re\)constructed](#)

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[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.](#)

3. Add the following courses:

### **Phil 352 Philosophy, Politics, and Economics (3 cr)**

Same as 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.

### **POLS 352 Philosophy, Politics, and Economics (3 cr)**

See Phil 352.

### **POLS 384 African Politics (3 cr)**

See IS 384.

### **POLS 565 Local Government Law (3 cr)**

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.

4. Change the following course:

### **PolS 555 ~~Seminar in Administrative Theory~~ [Public Administration Theory](#) (3 cr)**

Major writers in ~~administrative~~ [public administration](#) theory and concepts such as leadership, supervision, authority, decision-making, and human relations. ~~{Alt/yrs}~~

5. Drop the following course:

### **PolS 560 Seminar in Public Administration Professional Practice (3 cr)**

This course provides students with practical information and skills that are needed to support careers in local government administration. Topics will include professionalism, computer skills, resume writing, interview and presentation skills.

## **SOCIOLOGY AND ANTHROPOLOGY**

1. Add the following courses:

### **SOC 241 Global Sociology: Gender, Race, and Class Around the World (3 cr)**

This course introduces students to different social issues and events around the globe. By looking at these phenomena through the lenses of gender, race, and class, students will learn the complexities of different societies that often are not obvious in everyday representations in US culture and media. The goal is to develop student skills at independently investigating and interpreting global issues and events.

### **SOC 309 Social Science Research Methods (3 cr)**

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.

### **SOC 342 Gender and Science (3 cr)**

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This course examines the growing body of scholarship that analyzes the intersections of gender, sexuality, science, and technology. Throughout the course, students will explore the various barriers of expertise, the production of scientific knowledge, and the effects of technological developments. Students will participate in a learning community that allows them to shape their own directions of inquiry and develop their skills as scholarly investigators.

### **SOC 428 Self and Society (3 cr)**

This course provides an overview of sociological social psychological research examining the significance of the self within the larger society. Specific attention is paid to symbolic interactionism, including its historical and philosophical roots, its key concepts and ideas, and its different theoretical frameworks and methodologies. Various social psychological topics (e.g., the construction of the self, socialization, deviance, mental health, collective behavior) are examined from a symbolic interactionist perspective.

### **SOC 435 Psychopathy and Crime (3 cr)**

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.

**Prereq:** Soc 130

### **SOC 436 Mental Health and Crime (3 cr)**

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.

**Prereq:** SOC 130

### **SOC 442 Substance Use and Society (3 cr)**

This course reviews the current theory, empirical research, and controversies in relation to substance use in American society. It focuses on current and historical trends in substance use, definitions of substance use and abuse, the effects of substance use, cultural understandings and media portrayal of drugs and their use, and alcohol and drug policy.

2. Change the following course:

### **Soc 423 Economic (In)Justice in the United States ~~Sociology of Prosperity: Social Class and Economics in the 21st Century~~ (3 cr)**

*Gen Ed: Social Science, American Diversity*

~~For centuries people have puzzled and argued about the question, "What makes us prosperous?" Along with the different answers, people have also derived different ways to gauge societies' successes and failures at attaining prosperity. This class looks at some of the main ways people have cleverly answered questions about prosperity and how it can be measured. In doing so, we will develop our own measures for understanding how prosperous the US and other societies are. One common measure of prosperity is to examine the social stratification, namely the degree to which social classes experience unequal life chances. We will consider our own ideas about what prosperity is, how it can be encouraged, and what needs to change. 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.~~

**Prereq:** Soc 101 or Instructor Permission

3. Make the following curricular changes to the **Justice Studies Minor**:

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SOC 130 Introduction to Criminology 3 cr

**One of the following (3 cr):**

SOC 332 Sociology of Punishment 3 cr  
 SOC 334 Police and Social Control 3 cr

**One of the following (3 cr):**

SOC 328 Deviant Behavior 3 cr  
 SOC 330 Juvenile Delinquency 3 cr

**One of the following**

AIST 420 Native American Law 3 cr  
 PHIL 470 Philosophy of Law 3 cr  
 POLS 467 Constitutional Law 3 cr  
 POLS 468 Civil Liberties 3 cr  
 POLS 469/PHIL 469 The Judicial Process 3 cr  
[SOC 420](#) [Sociology of Law](#) [3 cr](#)

**Three or more of the following to total at least 21 cr for the minor (9 cr):**

AGEC 477 Law, Ethics and the Environment 3 cr  
 ANTH 451 Forensic Anthropology 3 cr  
 PSYC 311 Abnormal Psychology 3 cr  
 SOC 301 Introduction to Diversity and Stratification 3 cr  
 SOC 325 Family, Violence, and Society 3 cr  
 SOC 327 Sociology of the Family 3 cr  
 SOC 329 Homicide 3 cr  
 SOC 333 Elite and White Collar Crime 3 cr  
 SOC 335 Terrorism, Society and Justice 3 cr  
 SOC 336 Comparative Criminal Justice Systems 3 cr  
[SOC 337](#) [Violence and Society](#) [3 cr](#)  
 SOC 338 Regulation of Vice 3 cr  
 SOC 339/JAMM 339 Crime and the Media 3 cr  
 SOC 345 Extremism and American Society 3 cr  
 SOC 346 Responding to Risk 3 cr  
 SOC 404 Special Topics 1-16 cr  
[SOC 415](#) [Citizen's Police Academy](#) [3 cr](#)  
~~SOC 420~~ ~~Sociology of Law~~ ~~3 cr~~  
 SOC 421 Gender and Crime 3 cr  
 SOC 427/ANTH 427 Racial and Ethnic Relations 3 cr  
[SOC 435](#) [Psychopathy and Crime](#) [3 cr](#)  
[SOC 436](#) [Mental Health and Crime](#) [3 cr](#)  
 SOC 439 Inequalities in the Justice System 3 cr  
[SOC 443](#) [Substance Use and Society](#) [3 cr](#)  
 SOC 464 Criminology Abroad 3 cr  
 WLF 205 Wildlife Law Enforcement 2 cr

**Courses to total 21 credits for this minor**

4. Make the following curricular changes to the **Sociology Minor**:

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SOC 101 Introduction to Sociology 3 cr

## One of the following research methods courses (3 cr):

<a href="#">ANTH/SOC 416</a>	<a href="#">Qualitative Social Science Methods</a>	<a href="#">3 cr</a>
<a href="#">ANTH/SOC 417</a>	<a href="#">Social Data Analysis</a>	<a href="#">3 cr</a>
<a href="#">PSYC 218</a>	<a href="#">Introduction to Research in the Behavioral Sciences</a>	<a href="#">3 cr</a>
<a href="#">HIST 290</a>	<a href="#">The Historian's Craft</a>	<a href="#">3 cr</a>
<a href="#">HIST 300</a>	<a href="#">Research Methods in History</a>	<a href="#">3 cr</a>
<a href="#">POLS 235</a>	<a href="#">Political Research Methods and Approaches</a>	<a href="#">3 cr</a>
<a href="#">SOC 309</a>	<a href="#">Social Science Research Methods</a>	<a href="#">3 cr</a>

## ~~One of the following~~ Selected Electives (12 cr):

<a href="#">SOC 240</a>	<a href="#">Global Sociology: Gender, Race, and Class Around the World</a>	<a href="#">3 cr</a>
SOC 301	Introduction to Diversity and Stratification	3 cr
SOC 313	Collective Behavior	3 cr
SOC 315	Community Service Learning	1-4 cr
SOC 325	Family, Violence, and Society	3 cr
SOC 327	Sociology of the Family	3 cr
SOC 335	Terrorism, Society and Justice	3 cr
SOC 337	Violence and Society	3 cr
SOC 340	Social Change & Globalization	3 cr
SOC 341	Science, Technology, and Society	3 cr
<a href="#">SOC 342</a>	<a href="#">Gender and Science</a>	<a href="#">3 cr</a>
SOC 343	Power, Politics, and Society	3 cr
SOC 344	Urban Sociology	3 cr
SOC 345	Extremism and American Society	3 cr
SOC 346	Responding to Risk	3 cr
SOC 350	Food, Culture, and Society	3 cr
SOC 403	Workshop	1-16 cr
SOC 404	Special Topics	1-16 cr
SOC 415	Citizen's Police Academy	3 cr
SOC 416	Qualitative Social Science Methods	3 cr
SOC 417	Social Data Analysis	3 cr
<a href="#">SOC 423</a>	<a href="#">Economic (In)Justice in the United States</a>	<a href="#">3 cr</a>
SOC 424	Sociology of Gender	3 cr
SOC 425	Society and Popular Culture	3 cr
SOC 426	Sociology of Sports	3 cr
SOC 427	Racial and Ethnic Relations	3 cr
SOC 431	Personal and Social Issues in Aging	3 cr
SOC 439	Inequalities in the Justice System	3 cr
<a href="#">SOC 440</a>	<a href="#">Self and Society</a>	<a href="#">3 cr</a>
SOC 450	Dynamics of Social Protest	3 cr
SOC 465	Environment, Policy, and Justice	3 cr
SOC 498	Internship	1-6 cr
SOC 499	Directed Study	1-16 cr

## ~~Selected Electives~~

Courses to total **1821** credits for this minor

\*\*Note: No more than 6 credits in Soc 498 and 6 credits in Soc 499 may be counted toward this minor.

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**PROGRAM IN WOMEN’S AND GENDER STUDIES:**

1. Create the following prefix:

**WGSS** – Women’s, Gender, and Sexuality Studies

2. Change the following courses:

**WmSt 201 Introduction to Women’s, ~~and~~ Gender, and Sexuality Studies (3 cr)**

Gen Ed: Humanities, 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.

**WmSt 367 (s) Topics in Women’s, ~~and~~ Gender, and Sexuality Studies (3 cr, max arr)**

Topical examination of issues in women’s, ~~and~~ gender, and sexuality studies.

**WmSt 498 (s) Internship in Women’s, ~~and~~ Gender and Sexuality Studies (1-6 cr, max arr)**

Directed student internship in approved setting relevant to women’s, ~~and~~ gender, and sexuality studies with campus, local, national, or international organizations or offices. Various credits depending on the length and type of internship.

**Prereq:** WGSS 201, Permission of the Coordinator of Women’s, Gender, and Sexuality Studies

3. Make the following curricular changes to the **Women’s and Gender Studies Minor**:

WMST 201	Introduction to Women's and Gender Studies	3 cr
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**Elective Courses**

~~Chosen from~~ a minimum of three different subject prefixes from the list of courses below ~~two disciplines~~ (15 cr):

<u>ANTH 428</u>	<u>Social and Political Organization</u>	<u>3 cr</u>
COMM 432	Gender and Communication	3 cr
<u>ENGL 382</u>	<u>Queer Literature</u>	<u>3 cr</u>
ENGL 481	Women's Literature	3-6 cr - Max 98 cr
FCS 240	Intimate Relationships	3 cr
FCS 340	Parent-Child Relationships in Family and Community	3 cr
<u>FCS 346</u>	<u>Personal and Family Finance and Management</u>	<u>4 cr</u>
FCS 436	Theories of Child and Family Development	3 cr
FCS 440	Contemporary Family Relationships	3 cr
FCS 445	Issues in Work and Family Life	3 cr
FCS 462	Eating Disorders	2 cr
HIST 357	Women in Pre-Modern European History	3 cr
HIST 420	History of Women in American Society	3 cr
JAMM 340	Cultural Diversity and the Media	3 cr
<u>JAMM 441</u>	<u>Women in the Media</u>	<u>3 cr</u>
<u>Phil 405</u>	<u>Feminism and Philosophy</u>	<u>3 cr</u>
POLS 423	Politics, Policy and Gender	3 cr
PSYC 315	Psychology of Women	3 cr

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PSYC 320	Introduction to Social Psychology	3 cr
<a href="#">SOC 240</a>	<a href="#">Global Sociology: Gender, Race, and Class Around the World</a>	<a href="#">3 cr</a>
SOC 301	Introduction to Diversity and Stratification	3 cr
SOC 325	Family, Violence, and Society	3 cr
<a href="#">SOC 327</a>	<a href="#">Sociology of the Family</a>	<a href="#">3 cr</a>
<a href="#">SOC 342</a>	<a href="#">Gender and Science</a>	<a href="#">3 cr</a>
<a href="#">SOC 421</a>	<a href="#">Gender and Crime</a>	<a href="#">3 cr</a>
<a href="#">SOC 424</a>	<a href="#">Sociology of Gender</a>	<a href="#">3 cr</a>
SOC 427	Racial and Ethnic Relations	3 cr
<del>SOC 424</del>	<del>Sociology of Gender</del>	<del>3 cr</del>
<a href="#">WGSS 367</a>	<a href="#">Topics in Women's , Gender, and Sexuality Studies</a>	<a href="#">3 cr</a>
<a href="#">WGSS 404</a>	<a href="#">Special Topics</a>	<a href="#">cr arr</a>
<a href="#">WGSS 410</a>	<a href="#">Feminist Theory and Action</a>	<a href="#">3 cr</a>
<a href="#">WGSS 498</a>	<a href="#">Internship in Women's, Gender, and Sexuality Studies</a>	<a href="#">1-6 cr</a>
<del>WMST</del> <a href="#">WGSS</a> 499	Directed Study	1-16 cr
<a href="#">WGSS 502</a>	<a href="#">Directed Study</a>	<a href="#">1-16 cr</a>

*ENGL 481: May be retaken once to total 6 credits.*

## Courses to total 18 credits for this minor

With prior approval of the Women's and Gender 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 and Gender Studies minor. No more than 3 credits may count toward both the student's major and minor.

## COLLEGE OF NATURAL RESOURCES

### ENVIRONMENTAL SCIENCE

1. Make the following curricular changes to the **Professional Science Master** (P.S.M.):

#### **Professional Science Master. Major in Natural Resources and Environmental Science.**

~~Contact the Director of the Program in Environmental Science for information regarding this degree.~~

[The Professional Science Master \(P.S.M.\) degree is a partnership of the University of Idaho and regional employers, where graduates are immersed in enhanced learning and are faced with real-world learning scenarios. The P.S.M. is a national program with over 165 partner institutions participating in coordination with the National Professional Science Masters Association \(NPSMA\).](#)

[There are 3 requirements for the P.S.M. degree in Natural Resources and Environmental Science: \(1\) 12 credits of professional skills courses, \(2\) 15 credits in the student's Emphasis Area, and \(3\) 3 credits of elective skills courses.](#)

#### **Professional Skills Courses (12 cr):**

[At least three of the four skills courses must be taken at the 500 level. Joint listed courses must be taken at the graduate level. At least two of the skills courses must be designated PSM core courses, which include BUS 551, BUS 552, and ENG 522.](#)

#### **Scientific Communication (3cr):**

[ENGL 522](#)      [Communications for Science Professionals](#)

[3 Credits](#)

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[FOR 546](#)      [Science Synthesis and Communication](#)      [3 credits](#)

[AOLL 528](#)      [Program Planning Development Evaluation](#)      [3 credits](#)

## **Scientific Ethics (3cr):**

[PHIL 450](#)      [Ethics and Science](#)      [3 Credits](#)

[PHIL 552](#)      [Environmental Philosophy](#)      [3 Credits](#)

## **Leadership and Innovation (3cr):**

[BUS 552](#)      [Management of Scientific Innovation](#)      [3 Credits](#)

[MHR 513](#)      [Leadership and Organizational Behavior](#)      [3 Credits](#)

[AOLL 583](#)      [Organizational Leadership](#)      [3 Credits](#)

[EDAD 530](#)      [Ethical Leadership and Law in Education](#)      [3 Credits](#)

## **Managing Projects and Budgets (3cr):**

[BUS 551](#)      [Managing Scientific Projects](#)      [3 Credits](#)

[ACCT 482 / ACCT 582](#)      [Enterprise Accounting](#)      [3 Credits](#)

[COMM 410](#)      [Non-profit fundraising](#)      [3 Credits](#)

## **Emphasis Area Courses (15 cr):**

The following scientific tracks serve as emphasis areas. Students must select 15 credits of electives from one of these tracks.

### **Environmental Contamination**

[ENVS 450](#)      [Environmental Hydrology](#)      [3 Credits](#)

[FS 564](#)      [Food Toxicology](#)      [3 Credits](#)

[ENVS 428](#)      [Pollution Prevention](#)      [3 Credits](#)

[ENVS 541](#)      [Sampling and Analysis of Environmental Contamination](#)      [3 Credits](#)

[ENVS 579](#)      [Introduction to Environmental Regulations](#)      [3 Credits](#)

[FS 509](#)      [Environmental Toxicology](#)      [3 Credits](#)

[SOIL 438](#)      [Pesticides in the Environment](#)      [3 Credits](#)

[FOR 554](#)      [Air Quality, Pollution, and Smoke](#)      [3 Credits](#)

### **Sustainability Science**

[AGEC/ENVS 577](#)      [Law, Ethics and the Environment](#)      [3 Credits](#)

[ARCH 516](#)      [Social Sustainability of Contemporary Cities](#)      [3 Credits](#)

[POLS 573](#)      [Sustainable Community Development Planning](#)      [3 Credits](#)

[REM 440](#)      [Wildland Restoration Ecology](#)      [3 Credits](#)

[ENVS 485](#)      [Energy Efficiency and Conservation](#)      [3 Credits](#)

[ENVS 428](#)      [Pollution Prevention](#)      [3 Credits](#)

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<a href="#">GEOG 513</a>	<a href="#">Global Climate Change</a>	3 Credits
<a href="#">GEOG 455</a>	<a href="#">Societal Resilience and Adaption to Climate Change</a>	3 Credits
<a href="#">FS 509</a>	<a href="#">Environmental Toxicology</a>	3 Credits
<a href="#">FISH 540</a>	<a href="#">Wetland Restoration</a>	3 Credits
<a href="#">ENVS 536</a>	<a href="#">Principals of Sustainability</a>	3 Credits
<a href="#">WR 506</a>	<a href="#">Interdisciplinary Methods in Water Resources</a>	3 Credits

## Climate Change

<a href="#">BE 553</a>	<a href="#">NW Climate Change and Water Resources</a>	3 Credits
<a href="#">BIOP 520</a>	<a href="#">Introduction to Bioregional Planning</a>	3 Credits
<a href="#">FOR 462</a>	<a href="#">Watershed Science and Management</a>	3 Credits
<a href="#">GEOG 401</a>	<a href="#">Climatology</a>	3 Credits
<a href="#">GEOG 410</a>	<a href="#">Biogeography</a>	3 Credits
<a href="#">GEOG 420</a>	<a href="#">Land, Resources and the Environment</a>	3 Credits
<a href="#">GEOG 455</a>	<a href="#">Societal Resilience and Adaption to Climate Change</a>	3 Credits
<a href="#">NRS 510</a>	<a href="#">Applications of Communications Theory in Natural Resource Management</a>	3 Credits
<a href="#">GEOG 513</a>	<a href="#">Global Climate Change</a>	3 Credits

## Water Resources Management

<a href="#">ENVS 450</a>	<a href="#">Environmental Hydrology</a>	3 Credits
<a href="#">BE 552</a>	<a href="#">Environmental Water Quality</a>	3 Credits
<a href="#">NRS 573</a>	<a href="#">Planning and Decision Making for Water Management</a>	3 Credits
<a href="#">ENVS 546</a>	<a href="#">Drinking Water and Human Health</a>	3 Credits
<a href="#">FISH 540</a>	<a href="#">Wetland Restoration</a>	3 Credits
<a href="#">FOR 462</a>	<a href="#">Watershed Science and Management</a>	3 Credits
<a href="#">GEOG 524</a>	<a href="#">Hydrological Applications of GIS and Remote Sensing</a>	3 Credits
<a href="#">HYDR 512</a>	<a href="#">Environmental Hydrogeology</a>	3 Credits
<a href="#">WR 506</a>	<a href="#">Interdisciplinary Methods in Water Resources</a>	3 Credits
<a href="#">NRS 510</a>	<a href="#">Applications of Communications Theory in Natural Resource Management</a>	3 Credits

## Management of Regulated River Systems

<a href="#">FISH 515</a>	<a href="#">Large River Fisheries</a>	3 Credits
<a href="#">FISH 430</a>	<a href="#">Riparian Ecology and Management</a>	3 Credits
<a href="#">CE 421</a>	<a href="#">Engineering Hydrology</a>	3 Credits
<a href="#">CE 428</a>	<a href="#">Open Channel Hydraulics</a>	3 Credits
<a href="#">CE/ME 520</a>	<a href="#">Fluid Dynamics</a>	3 Credits
<a href="#">CE 535</a>	<a href="#">Fluvial Geomorphology and River Mechanics</a>	3 Credits
<a href="#">NRS 573</a>	<a href="#">Planning and Decision Making for Water Management</a>	3 Credits
<a href="#">NRS 510</a>	<a href="#">Applications of Communications Theory in Natural Resource Management</a>	3 Credits

## Ecohydrological Science and Management

<a href="#">ENVS 450</a>	<a href="#">Environmental Hydrology</a>	3 Credits
<a href="#">BE 552</a>	<a href="#">Environmental Water Quality</a>	3 Credits

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<a href="#">FISH 415</a>	<a href="#">Limnology</a>	<a href="#">4 Credits</a>
<a href="#">FISH 430</a>	<a href="#">Riparian Ecology and Management</a>	<a href="#">3 Credits</a>
<a href="#">FISH 515</a>	<a href="#">Large River Fisheries</a>	<a href="#">3 Credits</a>
<a href="#">FISH 540</a>	<a href="#">Wetland Restoration</a>	<a href="#">3 Credits</a>
<a href="#">FOR 462</a>	<a href="#">Watershed Science and Management</a>	<a href="#">3 Credits</a>
<a href="#">GEOG 524</a>	<a href="#">Hydrological Applications of GIS and Remote Sensing</a>	<a href="#">3 Credits</a>
<a href="#">HYDR 512</a>	<a href="#">Environmental Hydrogeology</a>	<a href="#">3 Credits</a>
<a href="#">REM 440</a>	<a href="#">Wildland Restoration Ecology</a>	<a href="#">3 Credits</a>
<a href="#">REM 452</a>	<a href="#">Western Wildland Landscapes</a>	<a href="#">1 Credit</a>
<a href="#">NRS 573</a>	<a href="#">Planning and Decision Making for Water Management</a>	<a href="#">3 Credits</a>
<a href="#">NRS 510</a>	<a href="#">Applications of Communications Theory in Natural Resource Management</a>	<a href="#">3 Credits</a>

### Bioenergy and Bioproducts

<a href="#">AGEC 451</a>	<a href="#">Applied Natural Resource and Environmental Economics</a>	<a href="#">3 Credits</a>
<a href="#">BE 585</a>	<a href="#">Fundamentals of Bioenergy and Bioproducts</a>	<a href="#">3 Credits</a>
<a href="#">BE 592</a>	<a href="#">Biofuels</a>	<a href="#">3 Credits</a>
<a href="#">BE 594</a>	<a href="#">Thermochemical Technologies for Biomass Conversion</a>	<a href="#">3 Credits</a>
<a href="#">ENVS/FS 536</a>	<a href="#">Principals of Sustainability</a>	<a href="#">3 Credits</a>
<a href="#">RMAT 438</a>	<a href="#">Introduction to Lignocellulosic Biomass Chemistry</a>	<a href="#">1 Credit</a>
<a href="#">RMAT 538</a>	<a href="#">Lignocellulosic Biomass Chemistry</a>	<a href="#">3 Credits</a>
<a href="#">RMAT 536</a>	<a href="#">Biocomposities</a>	<a href="#">3 Credits</a>
<a href="#">FOR 585</a>	<a href="#">Natural Resources Policy Analysis</a>	<a href="#">2 Credits</a>
<a href="#">FS 538</a>	<a href="#">Introduction to Physics Properties of Food</a>	<a href="#">2 Credits</a>
<a href="#">FS 570</a>	<a href="#">Advanced Food Technology</a>	<a href="#">3 Credits</a>
<a href="#">PLSC 407</a>	<a href="#">Field Crop Production</a>	<a href="#">3 Credits</a>
<a href="#">PLSC 546</a>	<a href="#">Plant Breeding</a>	<a href="#">3 Credits</a>

### Sustainable Food and Fiber

<a href="#">AGED 406</a>	<a href="#">Exploring International Agriculture</a>	<a href="#">3 Credits</a>
<a href="#">AGED 548</a>	<a href="#">Foundations of Extension Education</a>	<a href="#">2 Credits</a>
<a href="#">ENVS/FS 536</a>	<a href="#">Principals of Sustainability</a>	<a href="#">3 Credits</a>
<a href="#">FS 510</a>	<a href="#">Functional Foods and Health</a>	<a href="#">2 Credits</a>
<a href="#">FS 516</a>	<a href="#">Food Laws</a>	<a href="#">2 Credits</a>
<a href="#">FS 564</a>	<a href="#">Food Toxicology</a>	<a href="#">3 Credits</a>
<a href="#">GEOG 586</a>	<a href="#">Transportation, GIS and Planning</a>	<a href="#">3 Credits</a>
<a href="#">PLSC 407</a>	<a href="#">Field Crop Production</a>	<a href="#">3 Credits</a>
<a href="#">PLSC 546</a>	<a href="#">Plant Breeding</a>	<a href="#">3 Credits</a>
<a href="#">PLSC 551</a>	<a href="#">Vegetable Crops</a>	<a href="#">3 Credits</a>
<a href="#">SOIL 417</a>	<a href="#">Market Garden Practicum</a>	<a href="#">1-16 Credits</a>
<a href="#">SOIL 438</a>	<a href="#">Pesticides in the Environment</a>	<a href="#">3 Credits</a>
<a href="#">SOIL 446</a>	<a href="#">Soil Fertility</a>	<a href="#">3 Credits</a>
<a href="#">SOIL 527</a>	<a href="#">Sustainable Food Systems</a>	<a href="#">3 Credits</a>

### Geographic Information Skills, Mapping, and Monitoring

<a href="#">GEOG 524</a>	<a href="#">Hydrologic Applications of GIS and Remote Sensing</a>	<a href="#">3 Credits</a>
<a href="#">REM 510</a>	<a href="#">GIS Applications in Fire Ecology and Management</a>	<a href="#">2 Credits</a>

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<a href="#">REM 507</a>	<a href="#">Landscape and Habitat Dynamics</a>	<a href="#">3 Credits</a>
<a href="#">FOR 554</a>	<a href="#">Air Quality, Pollution, and Smoke</a>	<a href="#">3 Credits</a>
<a href="#">ECE 516</a>	<a href="#">Image Sensors and Systems (via EO)</a>	<a href="#">3 Credits</a>
<a href="#">STAT 419</a>	<a href="#">Introduction to SAS/R Programming (via EO)</a>	<a href="#">3 Credits</a>
<a href="#">STAT 555</a>	<a href="#">Statistical Ecology (via EO)</a>	<a href="#">3 Credits</a>

## Elective Science Skills (3cr):

The elective skills course should complement the student's Emphasis Area, but does not have to be from within that Emphasis Area.

## Courses to total 30 credits for this degree

### FISH AND WILDLIFE

1. Add the following courses:

#### **WLF 270 Management and Communication of Scientific Data (2 cr)**

Students will learn skills for managing and presenting scientific data. Spreadsheets and basic data management software, summary, and graphical representation. Written presentation of scientific information will include organization, grammar, and citation formats appropriate for scientific reports.

#### **WLF 575 Behavioral Ecology (2 cr)**

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.

2. Change the following courses:

#### **WLF 492 Wildlife Management (4 cr)**

*Gen Ed: 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 a [week](#); two days of field trips. (Spring only)

**Prereq:** ~~WLF 316 and WLF 448~~ [WLF 314, Senior standing](#)

**Prereq or Coreq:** ~~WLF 482 or Fish 481 or Biol 483~~ [WLF 448](#)

#### **WLF 506 (s) External Speakers (1 cr, 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 Pass/Fail.

3. Make the following curricular changes to the **Major in Fisheries Resources** (B.S.Fish.Res.)

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

#### **First and Second Years**

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 213	Principles of Biological Structure and Function	4 cr
COMM 101	Fundamntls Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FISH 102	The Fish and Wildlife Professions	1 cr

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FISH 202	Fish 202 Fish & Wildlife Applications II	1 cr
FOR 235	Society and Natural Resources	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
WLF 201	Fish and Wildlife Applications I	1 cr
<a href="#">WLF 270</a>	<a href="#">Management and Communication of Scientific Data</a>	<a href="#">2 cr</a>

### 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 (3 cr):

CHEM 275	Carbon Compounds	3 cr
CHEM 277	Organic Chemistry I	3 cr

### One of the following (3 cr):

FOR 221	Principles of Ecology	3 cr
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### One of the following (4 cr):

MATH 160	Survey of Calculus	4 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

### One of the following (4 cr):

GEOG 100	Physical Geography	3 cr
	AND	
GEOG 100L	Physical Geography Lab	1 cr
GEOL 101	Physical Geology	3 cr
	AND	
GEOL 101L	Physical Geology Lab	1 cr
PHYS 100	Fundamentals of Physics	3 cr
	AND	
PHYS 100L	Fundamentals of Physics Lab	1 cr
PHYS 111	General Physics I	3 cr
	AND	
PHYS 111L	General Physics I Lab	1 cr

### Third and Fourth Years

BIOL 250	General Microbiology	3 cr
BIOL 255	General Microbiology Lab	2 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 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 481	Ichthyology	4 cr
FISH 495	Fisheries Seminar	1 cr

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WLF 371	Physiological Ecology of Fish and Wildlife	3 cr
WLF 448	Fish and Wildlife Population Ecology	4 cr

### One of the following (2 cr):

FISH 398	Renewable Natural Resources Internship	1-16 cr
WLF 398	Renewable Natural Resources Internship	1-16 cr

### One of the following (3 cr):

<del>ENGL 313</del>	<del>Business Writing</del>	<del>3 cr</del>
<del>ENGL 316</del>	<del>Environmental Writing</del>	<del>3 cr</del>
<del>ENGL 317</del>	<del>Technical Writing</del>	<del>3 cr</del>
<del>ENGL 318</del>	<del>Science Writing</del>	<del>3 cr</del>

### One of the following (4 cr):

FISH 422	Concepts in Aquaculture	4 cr
FISH 424	Fish Health Management	4 cr

### One of the following (3 cr):

BIOL 310	Genetics	3 cr
GENE 314	General Genetics	3 cr

### Courses to total 120 credits for this degree

4. Make the following curricular changes to the **Major in Wildlife Resources** (B.S.Wildl.Res.)

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

#### First and Second Years

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 213	Principles of Biological Structure and Function	4 cr
CHEM 101	Introduction to Chemistry I	4 cr
COMM 101	Fundamentals Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FISH 202	Fish 202 Fish & Wildlife Applications II	1 cr
FOR 235	Society and Natural Resources	3 cr
NR 101	Exploring Natural Resources	2 cr
STAT 251	Statistical Methods	3 cr
WLF 102	The Fish and Wildlife Professions	1 cr
WLF 201	Fish and Wildlife Applications I	1 cr
<a href="#">WLF 270</a>	<a href="#">Management and Communication of Scientific Data</a>	<a href="#">2 cr</a>

#### Ecology (3 cr):

FOR 221	Principles of Ecology	3 cr
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#### One of the following (3 cr):

CHEM 275	Carbon Compounds	3 cr
CHEM 277	Organic Chemistry I	3 cr

#### One of the following (3-4 cr):

FOR 320	Dendrology	4 cr
REM 341	Systematic Botany	3 cr

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REM 252 Wildland Plant Identification 2 cr  
 AND

REM 253 Wildland Plant Identification Field Studies 1 cr

**One of the following (4 cr):**

GEOL 101 Physical Geology 3 cr  
 AND

GEOL 101L Physical Geology Lab 1 cr

PHYS 100 Fundamentals of Physics 3 cr  
 AND

PHYS 100L Fundamentals of Physics Lab 1 cr

PHYS 111 General Physics I 3 cr  
 AND

PHYS 111L General Physics I Lab 1 cr

SOIL 205 The Soil Ecosystem 3 cr  
 AND

SOIL 206 The Soil Ecosystem Lab 1 cr

**One of the following (4 cr):**

MATH 160 Survey of Calculus 4 cr

MATH 170 Analytic Geometry and Calculus I 4 cr

**Third and Fourth Years**

FOR 375 Introduction to Spatial Analysis for Natural Resource Management 3 cr

NRS 383 Natural Resource and Ecosystem Service Economics 3 cr

REM 411 Wildland Habitat Ecology and Assessment 2 cr

WLF 314 Ecology of Terrestrial Vertebrates 3 cr

WLF 315 Techniques Laboratory 2 cr

WLF 371 Physiological Ecology of Fish and Wildlife 3 cr

WLF 440 Conservation Biology 3 cr

WLF 448 Fish and Wildlife Population Ecology 4 cr

WLF 492 Wildlife Management 4 cr

**One of the following (3 cr):**

BIOL 310 Genetics 3 cr

GENE 314 General Genetics 3 cr

**One of the following (3 cr):**

~~ENGL 316 Environmental Writing 3 cr~~

~~ENGL 317 Technical Writing 3 cr~~

~~ENGL 318 Science Writing 3 cr~~

**One of the following (2-3 cr):**

COMM 410 Conflict Management 3 cr

FOR 484 Forest Policy and Administration 2 cr

NRS 250 Environmental Problem Solving 3 cr

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NRS 387	Environmental Communication Skills	3 cr
NRS 462	Natural Resource Policy	3 cr
NRS 311	Public Involvement in Natural Resource Management	3 cr
WLF 205	Wildlife Law Enforcement	2 cr

### One of the following (2 cr):

FISH 398	Renewable Natural Resources Internship	1-16 cr
WLF 398	Renewable Natural Resources Internship	1-16 cr

### Restricted electives

Choose two courses from the following (must receive a grade of C or better):

BIOL 483	Mammalogy	3 cr
BIOL 489	Herpetology	4 cr
FISH 481	Ichthyology	4 cr
WLF 482	Ornithology	4 cr

### Courses to total 120 credits for this degree

## FOREST, RANGELAND, AND FIRE SCIENCES

1. Add the following course:

### **RMAT 401 Undergraduate Research (1-3 cr)**

Directed undergraduate research at the upper division level.

**Prereq:** Junior or senior standing

2. Change the following courses:

### **For 310 Indigenous Culture and Ecology (3 cr, max 9)**

~~Students will explore how both endemic plant and animal species and native culture have been impacted by non-native species. A roughly 10 day field trip to remote communities requires active and effective participation, hands-on projects are conducted in those communities based on preparatory materials, and a there is a major presentation for Idaho stakeholders upon completion of the field trip. 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.~~

**Prereq:** REM 221/FOR 221/ WLF 220 and FOR 235/NRS 235

### **REM 144 Wildland Fire Management (23 cr)**

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.

### **REM 410 Principles of Vegetation Monitoring and Measurement (2 cr)**

~~On-line-~~This course introduces theory and application of quantitative and qualitative methods for measuring and monitoring designed to give an overview of vegetation measurement techniques for in grasslands, shrublands, woodlands, and forests. Students will gain a solid understanding of how to measure and evaluate and monitor vegetation attributes and design and implement monitoring programs relative to wildlife habitat, livestock forage, fire fuel characteristics, watershed function, and many other wildland values. Class field trip required.

Recommended Preparation: A basic understanding of how to use computer spreadsheets such as Excel. (Fall only)

Students ~~who desire a hands-on and interactive experience with vegetation measurement~~ are encouraged to also

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enroll in REM 411 which ~~is a course that~~ builds on the principles ~~delivered in~~ of REM 410 ~~and includes field experiences for wildland habitat assessment.~~

**Prereq:** Stat 251 or permission

### 3. Make the following curricular changes to the **Major in Forestry** (B.S.Forestry):

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

BIOL 114	Organisms and Environments	4 cr
ECON 202	Principles of Microeconomics	3 cr
ENT 469	Introduction to Forest Insects	2 cr
FOR 102	Introduction to Forest Management	1 cr
FOR 235	Society and Natural Resources	3 cr
FOR 275	Forestry Resource Sampling	2 cr
FOR 274	Forest Measurement and Inventory	3 cr
FOR 320	Dendrology	4 cr
FOR 324	Forest Regeneration	3 cr
FOR 330	Forest Soil and Canopy Processes	4 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
FOR 424	Silviculture Principles and Practices	4 cr
FOR 430	Forest Operations	3 cr
FOR 462	Watershed Science and Management	3 cr
FOR 468	Forest and Plant Pathology	2 cr
FOR 484	Forest Policy and Administration	2 cr
MATH 143	Pre-calculus Algebra and Analytic Geometry	3 cr
MATH 144	Analytic Trigonometry	1 cr
NR 101	Exploring Natural Resources	2 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
PHYS 100	Fundamentals of Physics	3 cr
PLSC 205	General Botany	4 cr
<del>REM 144</del>	<del>Wildland Fire Management</del>	<del>2 cr</del>
SOIL 205	The Soil Ecosystem	3 cr
SOIL 206	The Soil Ecosystem Lab	1 cr
STAT 251	Statistical Methods	3 cr

#### One of the following (2-3 cr):

<u>REM 144</u>	<u>Wildland Fire Management</u>	<u>2 cr</u>
<u>FOR 326</u>	<u>Fire Ecology and Management</u>	<u>3 cr</u>

#### **One of the following (4 cr):**

CHEM 101	Introduction to Chemistry I	4 cr
CHEM 111	Principles of Chemistry I	4 cr
Ecology (3 cr):		
FOR 221	Principles of Ecology	3 cr

#### **Advisor Approved Electives or Minor**

Complete 13 credits of Advisor Approved Electives OR one of the following Minors:

Business

Ecology

Environmental Communication

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Fire Ecology and Management  
Fishery Resources  
Forest Operations  
Horticulture  
Natural Resource Conservation  
Natural Resources Economics  
Renewable Materials  
Rangeland Ecology and Management  
Soil Science  
Wildlife Resources

## Courses to total 120 credits for this degree

\*Note: 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.

4. Make the following curricular changes to the **Major in Fire Ecology and Management (B.S.Fire.Ecol.Mgmt.)**:

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

ECON 202	Principles of Microeconomics	3 cr
FOR 235	Society and Natural Resources	3 cr
FOR 274	Forest Measurement and Inventory	3 cr
FOR 326	Fire Ecology and Management	3 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
FOR 427	Prescribed Burning Lab	3 cr
FOR 433	Fire and Fuel Modeling	2 cr
FOR 450	Fire Behavior	2 cr
FOR 484	Forest Policy and Administration	2 cr
NR 101	Exploring Natural Resources	2 cr
<del>NRS 125</del>	<del>Introduction to Conservation and Natural Resources</del>	<del>3 cr</del>
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
PHYS 100	Fundamentals of Physics	3 cr
PHYS 100L	Fundamentals of Physics Lab	1 cr
PLSC 205	General Botany	4 cr
REM 144	Wildland Fire Management	2 cr
REM 407	GIS Application in Fire Ecology and Management	2 cr
REM 459	Rangeland Ecology	2 cr
SOIL 205	The Soil Ecosystem	3 cr
SOIL 206	The Soil Ecosystem Lab	1 cr
STAT 251	Statistical Methods	3 cr

### One of the following (3-4 cr):

FOR 330	Forest Soil and Canopy Processes	4 cr
FOR 424	Silviculture Principles and Practices	4 cr
REM 456	Integrated Rangeland Management	3 cr

### One of the following (3 cr):

FOR 435	Remote Sensing of Fire	3 cr
REM 429	Landscape Ecology	3 cr

### One of the following (4 cr):

BIOL 114	Organisms and Environments	4 cr
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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 (4 cr):**

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

**One of the following (3 cr):**

ENGL 313	Business Writing	3 cr
ENGL 317	Technical Writing	3 cr

**Ecology (3 cr):**

FOR 221	Principles of Ecology	3 cr
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**One of the following courses (3 cr):**

FOR 454	Air Quality, Pollution, and Smoke	3 cr
GEOG 301	Meteorology	3 cr
GEOG 313	Global Climate Change	3 cr

**One of the following (3-4 cr):**

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

**One of the following courses (3-4 cr):**

FOR 320	Dendrology	4 cr
REM 252	Wildland Plant Identification	2 cr
REM 341	Systematic Botany	3 cr

**Advisor Approved Electives or Approved Minor**

Complete ~~13~~15 credits of Advisor Approved Electives OR one of the following Minors:

- Rangeland Ecology and Management
- Forest Resources
- Natural Resource Conservation
- Natural Resources Economics
- Fishery Resources
- Wildlife Resources
- Ecology
- Forest Operations
- Renewable Materials

**Courses to total 120 credits for this degree**

5. Make the following curricular changes to the **Major in Rangeland Conservation (B.S.Rangeland.Consv.)**:

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his 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) and:

**First and Second Years**

<del>AVS 109</del>	<del>The Science of Animals that Serve Humanity</del>	<del>4 cr</del>
BIOL 114	Organisms and Environments	4 cr
COMM 101	Fundamentals Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FOR 235	Society and Natural Resources	3 cr
NR 101	Exploring Natural Resources	2 cr
REM 151	Rangeland Principles	3 cr
SOIL 205	The Soil Ecosystem	3 cr
SOIL 206	The Soil Ecosystem Lab	1 cr
STAT 251	Statistical Methods	3 cr
REM 252	Wildland Plant Identification	2 cr
REM 253	Wildland Plant Identification Field Studies	1 cr

**One of the following (3-4 cr):**

<a href="#">AVS 109</a>	<a href="#">The Science of Animals that Serve Humanity</a>	<a href="#">4 cr</a>
<a href="#">AVS 110</a>	<a href="#">Science of Animal Husbandry</a>	<a href="#">3 cr</a>

**One of the following (4 cr):**

BIOL 213	Principles of Biological Structure and Function	4 cr
PLSC 205	General Botany	4 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 (3-4 cr):**

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

**Ecology (3 cr):**

FOR 221	Principles of Ecology	3 cr
<a href="#">NR 321</a>	<a href="#">Ecology</a>	<a href="#">3 cr</a>

**Third and Fourth Years**

FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 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 456	Integrated Rangeland Management	3 cr
REM 459	Rangeland Ecology	2 cr
REM 460	Integrating GIS and Field Studies in Rangelands	2 cr



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Required course work includes the university requirements (see regulation J-3) and ~~one of the following options:~~

ACCT 201	Introduction to Financial Accounting	3 cr
ACCT 202	Introduction to Managerial Accounting	3 cr
BIOL 102	Biology and Society	3 cr
BIOL 102L	Biology and Society Lab	1 cr
BLAW 265	Legal Environment of Business	3 cr
COMM 101	Fundamentals Public Speaking	2 cr
ECON 202	Principles of Microeconomics	3 cr
FOR 235	Society and Natural Resources	3 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NR 101	Exploring Natural Resources	2 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
PHYS 111	General Physics I	3 cr
RMAT 100	Intro to Renewable Resources	2 cr
RMAT 321	Properties of Renewable Materials	3 cr
<a href="#">RMAT 401</a>	<a href="#">Undergraduate Research</a>	<a href="#">1-3 cr</a>
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/ MKTG 495	Product Development and Brand Management	3 cr
RMAT 498	Renewable Natural Resources Internship	1-16 cr
STAT 251	Statistical Methods	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 (3 cr):

CHEM 275	Carbon Compounds	3 cr
CHEM 277	Organic Chemistry I	3 cr

### One of the following (3-4 cr):

ENGL 313	Business Writing	3 cr
ENGL 317	Technical Writing	3 cr

### Ecology (3 cr):

FOR 221	Principles of Ecology	3 cr
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### One of the following (4 cr):

MATH 160	Survey of Calculus	4 cr
MATH 170	Analytic Geometry and Calculus I	4 cr

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## **Restricted Electives (21 cr):**

<del>ACCT 482</del>	<del>Enterprise Accounting</del>	<del>3 cr</del>
<del>ARCH 154</del>	<del>Introduction to Architectural Graphics</del>	<del>3 cr</del>
<del>ARCH 266</del>	<del>Materials and Methods</del>	<del>3 cr</del>
<del>ARCH 463</del>	<del>Environmental Control Systems I</del>	<del>3 cr</del>
<del>ARCH 464</del>	<del>Environmental Control Systems II</del>	<del>3 cr</del>
<del>BE 485</del>	<del>Fundamentals of Bioenergy and Bioproducts</del>	<del>3 cr</del>
<del>BE 492</del>	<del>Biofuels</del>	<del>3 cr</del>
<del>BE 494</del>	<del>Thermochemical Technologies for Biomass Conversion</del>	<del>3 cr</del>
<del>BUS 101</del>	<del>Introduction to Business Enterprises</del>	<del>3 cr</del>
<del>BUS 190</del>	<del>Integrated Business and Value Creation</del>	<del>3 cr</del>
<del>FIN 301</del>	<del>Financial Resources Management</del>	<del>3 cr</del>
<del>MHR 311</del>	<del>Introduction to Management</del>	<del>3 cr</del>
<del>MKTG 321</del>	<del>Marketing</del>	<del>3 cr</del>
<del>MIS 350</del>	<del>Managing Information</del>	<del>3 cr</del>
<del>MIS 351</del>	<del>Intro to Elec Commerce</del>	<del>3 cr</del>
<del>OM 370</del>	<del>Process Management</del>	<del>3 cr</del>
<del>OM 378</del>	<del>Project Management</del>	<del>3 cr</del>
<del>ENTR 414</del>	<del>Entrepreneurship</del>	<del>3 cr</del>
<del>ENTR 415</del>	<del>New Venture Creation</del>	<del>3 cr</del>
<del>MKTG 424</del>	<del>Pricing Strategy and Tactics</del>	<del>3 cr</del>
<del>OM 456</del>	<del>Quality Management</del>	<del>3 cr</del>
<del>ECON 272</del>	<del>Foundations of Economic Analysis</del>	<del>4 cr</del>
<del>FOR 430</del>	<del>Forest Operations</del>	<del>3 cr</del>
<del>FOR 431</del>	<del>Low Volume Forest Roads</del>	<del>2 cr</del>
<del>FOR 436</del>	<del>Cable Systems</del>	<del>2 cr</del>
<del>LARC 251</del>	<del>Intro Principles of Site Dsgn</del>	<del>3 cr</del>
<del>MSE 434</del>	<del>Fundamentals of Polymeric Materials</del>	<del>3 cr</del>
<del>RMAT 538</del>	<del>Lignocellulosic Biomass Chemistry</del>	<del>3 cr</del>
<del>STAT 301</del>	<del>Probability and Statistics</del>	<del>3 cr</del>

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. The emphasis area must be approved by the student's academic advisor.

## **Courses to total 120 credits for this degree**

7. Make the following curricular changes to the **Restoration Ecology Undergraduate Academic Certificate**:

<del>REM 221</del>	<del>Principles of Ecology</del>	<del>3 cr</del>
REM 280	Introduction to Wildland Restoration	2 cr
REM 440	Wildland Restoration Ecology	3 cr
REM 459	Rangeland Ecology	2 cr
SOIL 205	The Soil Ecosystem	3 cr

## One of the following (3 cr):

<u>REM 221</u>	<u>Principles of Ecology</u>	<u>3 cr</u>
<u>NR 321</u>	<u>Ecology</u>	<u>3 cr</u>

## **One of the following (3 cr):**

FOR 324	Forest Regeneration	3 cr
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FOR 326	Fire Ecology and Management	3 cr
LARC 480	The Resilient Landscape	3 cr
PLSC 338	Weed Control	4 cr
PLSC 410	Invasive Plant Biology	3 cr
<a href="#">PLSC 419</a>	<a href="#">Plant Community Restoration Methods</a>	<a href="#">3 cr</a>
REM 429	Landscape Ecology	3 cr
REM 450	Global Environmental Change	3 cr
SOIL 438	Pesticides in the Environment	3 cr
SOIL 454	Pedology	3 cr
WLF 440	Conservation Biology	3 cr

**Courses to total 16 credits for this certificate**

## NATURAL RESOURCES

1. Make the following curricular changes to the **Major in Ecology and Conservation Biology** (B.S.Ecol.Cons.Biol.):

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

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 213	Principles of Biological Structure and Function	4 cr
COMM 101	Fundamentals Public Speaking	2 cr
<del>ENGL 317</del>	<del>Technical Writing</del>	<del>3 cr</del>
FOR 235	Society and Natural Resources	3 cr
FOR 375	Introduction to Spatial Analysis for Natural Resource Management	3 cr
NR 101	Exploring Natural Resources	2 cr
NR 200	Seminar	1-16 cr
NR 300	Ecology and Conservation Biology Thesis Seminar	1 cr
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
STAT 251	Statistical Methods	3 cr

### One of the following (3 cr):

<a href="#">ENGL 317</a>	<a href="#">Technical Writing</a>	<a href="#">3 cr</a>
<a href="#">WLF 270</a>	<a href="#">Management and Communication of Scientific Data</a>	<a href="#">2 cr</a>

### **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 (3-4 cr):**

ECON 202	Principles of Microeconomics	3 cr
ECON 272	Foundations of Economic Analysis	4 cr

### **One of the following (3-4 cr):**

BIOL 314	Ecology and Population Biology	4 cr
FOR 221	Principles of Ecology	3 cr

### **One of the following (4 cr):**

MATH 160	Survey of Calculus	4 cr
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MATH 170 Analytic Geometry and Calculus I 4 cr

### One of the following (3-4 cr):

FOR 320 Dendrology 4 cr  
REM 341 Systematic Botany 3 cr

### Choose one of the following (1 cr):

FISH 473 ECB Senior Presentation 1 cr  
FOR 473 ECB Senior Presentation 1 cr  
NRS 473 ECB Senior Presentation 1 cr  
REM 473 ECB Senior Presentation 1 cr  
RMAT 473 ECB Senior Presentation 1 cr  
WLF 473 ECB Senior Presentation 1 cr

### Choose one of the following (3 cr):

FISH 485 Ecology and Conservation Biology Senior Project 1-3 cr - Max 3 cr  
FISH 497 Senior Thesis 1-3 cr - Max 6 cr  
FOR 497 Senior Thesis 1-4 cr - Max 98 cr  
NR 497 Senior Thesis 1-3 cr - Max 3 cr  
REM 497 Senior Research and Thesis 1-16 cr  
WLF 497 Senior Thesis 1-3 cr - Max 6 cr

### And one of the following options:

#### A. Natural Resources Ecology Option

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#### B. Conservation Biology Option

To graduate in this option, students must achieve a "C" or better in the following seven core courses: BIOL 421, NR 200, REM 429, PHIL 452, WLF 440, and WLF 448.

BIOL 421 Advanced Evolution/Population Dynamics 3 cr  
PHIL 452 Environmental Philosophy 3 cr  
REM 429 Landscape Ecology 3 cr  
WLF 440 Conservation Biology 3 cr  
WLF 448 Fish and Wildlife Population Ecology 4 cr

### One of the following (3 cr):

BIOL 310 Genetics 3 cr  
GENE 314 General Genetics 3 cr

### One of the following (3 cr):

[ENVS 225](#) [International Environmental Issues](#) 3 cr  
NRS 493 International Land Preservation and Conservation Systems 3 cr  
REM 450 Global Environmental Change 3 cr

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### Quantitative Resource Analysis Restricted Electives

#### One course from the following:

FOR 472	Remote Sensing of the Environment	4 cr
GEOG 385	GIS Primer	3 cr
NRS 310	Social Science Methods	4 cr
REM 410	Principles of Vegetation Measurement	2 cr
REM 411	Wildland Habitat Ecology and Assessment	2 cr
STAT 422	Survey Sampling Methods	3 cr
STAT 431	Statistical Analysis	3 cr

*REM 410, REM 411: Both REM 410 and REM 411 must be completed to satisfy Quantitative Resource Analysis Restricted Elective requirement.*

### Resource Management Restricted Electives

#### One course from the following:

FISH 418	Fisheries Management	4 cr
FOR 424	Silviculture Principles and Practices	4 cr
FOR 462	Watershed Science and Management	3 cr
NRS 386	Social-Ecological Systems	3 cr
NRS 490	Wilderness and Protected Area Management	3 cr
NRS 496	Monitoring Impacts in Protected Areas and Wilderness	3 cr
REM 456	Integrated Rangeland Management	3 cr
WLF 492	Wildlife Management	4 cr

### Ecology Restricted Electives (6 cr):

(At least 2 credits from FISH 315, FISH 415, FISH 430, REM 460, and/or WLF 315)

BIOL 478	Animal Behavior	3 cr
ENT 469	Introduction to Forest Insects	2 cr
FISH 314	Fish Ecology	3 cr
FISH 315	Fish Ecology Lab	1 cr
FISH 415	Limnology	4 cr
FISH 430	Riparian Ecology and Management	3 cr
FOR 330	Forest Soil and Canopy Processes	4 cr
FOR 326	Fire Ecology and Management	3 cr
FOR 468	Forest and Plant Pathology	2 cr
GEOG 410	Biogeography	3 cr
PLSC 410	Invasive Plant Biology	3 cr
REM 440	Wildland Restoration Ecology	3 cr
REM 459	Rangeland Ecology	2 cr
REM 460	Integrating GIS and Field Studies in Rangelands	2 cr
WLF 314	Ecology of Terrestrial Vertebrates	3 cr
WLF 315	Techniques Laboratory	2 cr

### Organismal Biology Restricted Elective

#### One course from the following:

BIOL 483	Mammalogy	3 cr
BIOL 489	Herpetology	4 cr
FISH 481	Ichthyology	4 cr
WLF 482	Ornithology	4 cr

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**Social/Political Restricted Electives**

**One course from the following:**

COMM 410	Conflict Management	3 cr
FOR 484	Forest Policy and Administration	2 cr
GEOG 420	Land, Resources, and Environment	3 cr
HIST 424	American Environmental History	3 cr
NRS 387	Environmental Communication Skills	3 cr
NRS 462	Natural Resource Policy	3 cr
NRS 311	Public Involvement in Natural Resource Management	3 cr
POLS 364	Politics of the Environment	3 cr

**Courses to total 120 credits for this degree**

2. Make the following curricular changes to the **Major in Natural Resources (M.N.R.)**:

**Master of Natural Resources. Major in Natural Resources. Integrated Natural Resources Option.**

~~The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for mid- and executive-level 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 – ecological, the human dimension, planning, policy and law, and practical tools – 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 consists of 30 semester credits (five credits from each of four MNR program categories – Ecology & Management, Law, Human Dimensions, Policy, Planning, and Tools & Technology, eight elective course credits from the MNR curriculum, and two credits for a case study project). Up to 12 semester credits can be transferred into the program from other institutions. General MNR requirements apply.~~

~~The MNR program can be combined with two different certificate programs specializing in restoration ecology and fire science. Admission to the College of Graduate Studies requires a minimum graduate point average (GPA) of 3.0, three letters of reference, and the Graduate Record Examination (GRE).~~

~~Complete admission and degree information available online at [www.MyMNR.net](http://www.MyMNR.net). Coursework must include a minimum of 18 credits numbered 500 or above.~~

~~**A minimum of five credits from each of the four categories below (20 cr):**~~

~~[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 various perspectives – ecology; 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 Integrated Natural Resources Option of 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](#)~~

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credits from each of three MNR program categories – Ecology and Management; Policy, Planning and Society; and Tools and Technology – plus 7 elective course credits and 2 credits for a final project). 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 graduate point average (GPA) of 3.0, 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/master-of-natural-resources>.

## A minimum of seven credits from each of the three categories below (21 cr):

### **Ecology and Management (minimum of 7 cr)**

BE 450	Environmental Hydrology	3 cr
FISH 540	Wetland Restoration	3 cr
<del>FOR 426</del>	<del>Global Fire Ecology and Management</del>	<del>3 cr</del>
FOR 526	Fire Ecology	3 cr
REM 440	Wildland Restoration Ecology	3 cr
REM 459	Rangeland Ecology	2 cr
REM 560	Ecophysiology	3 cr
<u>FISH 515</u>	<u>Large River Fisheries</u>	<u>2 cr</u>
<u>FISH 525</u>	<u>Aquaculture in Relation to Wild Fish Populations</u>	<u>2 cr</u>
<u>REM 456</u>	<u>Integrated Rangeland Management</u>	<u>3 cr</u>
<u>WLF 440</u>	<u>Conservation Biology</u>	<u>3 cr</u>
<u>REM 507</u>	<u>Landscape and Habitat Dynamics</u>	<u>3 cr</u>

*FOR 426, FOR 526: Either FOR 426 or FOR 526 may be used to satisfy the requirements of this degree. \*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).*

### **Human Dimensions in Natural Resources**

#### Policy, Planning, and Society (minimum of 7 cr)

NRS 572	Human Dimensions of Restoration Ecology	3 cr
ENVS 536	Principles of Sustainability	3 cr
ENVS 552	Environmental Philosophy	3 cr
NR 507	Moral Reasoning in Natural Resources	3 cr

#### ~~Policy, Planning, and Law~~

<del>NRS 573</del>	<del>Planning &amp; Decision Making for Watershed Management</del>	<del>3 cr</del>
NRS 574	Environmental Politics and Policy	3 cr
NRS 580	Restoration Ecology Practicum	2 cr
FOR 584	Natural Resource Policy Development	3 cr
FOR 587	Wildland Fire Policy	2 cr
<del>REM 456</del>	<del>Integrated Rangeland Management</del>	<del>3 cr</del>
<u>FOR 546</u>	<u>Science Synthesis and Communication</u>	<u>3 cr</u>
<u>FOR 554</u>	<u>Air Quality, Pollution, and Smoke</u>	<u>3 cr</u>

\*FOR 554/ 454 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).

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## Tools and Technology (minimum of 7 cr)

<del>BUS 552</del>	<del>Management of Scientific Innovation</del>	<del>3 cr</del>
<del>NRS 593</del>	<del>PR and Communications in Natural Resource Management</del>	<del>3 cr</del>
GEOG 524	Hydrologic Applications of GIS and Remote Sensing	3 cr
NR 525	Scientific Graphics Design	3 cr
POLS 553	Public Management Techniques	3 cr
REM 410	Principles of Vegetation Measurement	2 cr
<del>REM 507</del>	<del>Landscape and Habitat Dynamics</del>	<del>3 cr</del>
<u>REM 407/</u>	<u>GIS Application in Fire Ecology and Management</u>	<u>2 cr</u>
<u>REM 510</u>		
<u>NRS 580</u>	<u>Restoration Ecology Practicum</u>	<u>2 cr</u>
<u>FOR 451</u>	<u>Fuels Inventory and Management</u>	<u>3 cr</u>
<u>NRS 592</u>	<u>Emerging Media Outreach in Natural Resources</u>	<u>3 cr</u>
<u>WLF 540</u>	<u>Conservation Genetics</u>	<u>1-3 cr</u>
<u>WLF 561</u>	<u>Landscape Genetics</u>	<u>2 cr</u>

## Elective Courses (8 minimum of 7 cr):

Electives or additional courses from categories above~~from the~~ MNR Curriculum 7~~8~~ cr

## ~~Case Study~~ Final Project (2 cr):

<del>NR 599</del>	<del>Case Study Project</del>	<del>2 cr</del>
<u>NR 599</u>	<u>Non-thesis Research</u>	<u>1-16 cr</u>

Courses to total 30 credits for this degree

**Master of Natural Resources. Major in Natural Resources. Environmental Education and Science Communication Option.**

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## **Master of Natural Resources. Major in Natural Resources. Fire Ecology and Management Option.**

~~The Master of Natural Resources (MNR) is an interdisciplinary course-based graduate program designed for mid- and executive-level 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—ecological, the human dimension, planning, policy and law, and practical tools—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. General MNR requirements apply.~~

~~The MNR program can be combined with two different certificate programs specializing in restoration ecology and fire science. Admission to the College of Graduate Studies requires a minimum graduate point average (GPA) of 3.0, three letters of reference, and the Graduate Record Examination (GRE).~~

~~Complete admission and degree information available online at [www.MyMNR.net](http://www.MyMNR.net). Coursework must include a minimum of 18 credits numbered 500 or above.~~

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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 various perspectives – ecology; 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 science.

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 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; with 2 credits of non-thesis research for a final project). Up to 12 semester credits can be transferred into the program from other institutions. Admission to the College of Graduate Studies requires a minimum graduate point average (GPA) of 3.0, three letters of reference, and a statement of purpose. Coursework must include a minimum of 18 credits numbered 500 or above.

Complete admission and degree information is available online at:  
<http://www.uidaho.edu/cnr/grad-programs/master-of-natural-resources>.

## **Fire Science and Management Core Courses: A minimum of 15 credits (15 ~~14~~ cr):**

FOR 426	Global Fire Ecology and Management	<del>3 cr</del>
FOR 451	Fuels Inventory and Management	3 cr
FOR 526	Fire Ecology	3 cr
FOR 546	Science Synthesis and Communication	3 cr
FOR 557	Advanced Fire Behavior	3 cr
FOR 587	Wildland Fire Policy	2 cr
NR 599	Research	1-16 cr

*FOR 426, FOR 526: Either FOR 426 or FOR 526 may be used to satisfy the requirements of this degree.*

## **Ecology and Management Course Group (minimum of 2-3 cr):**

REM 440	Wildland Restoration Ecology	3 cr
REM 459	Rangeland Ecology	2 cr
REM 507	Landscape and Habitat Dynamics	3 cr

\*REM 507 Landscape and Habitat Dynamics can be used for either the Ecology requirement –OR- the Tools and Technology requirement (but not both).

## **Tools and Technology Course Group (minimum of 4 cr):**

REM 407	GIS Application in Fire Ecology and Management	2 cr
<u>REM 510</u>	<u>GIS Application in Fire Ecology and Management</u>	<u>2 cr</u>

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REM 410	Principles of Vegetation Measurement	2 cr
REM 411	Wildland Habitat Ecology and Assessment	2 cr

## Policy, Planning, and ~~Society~~ ~~Law Course Group~~ (minimum of 6 ~~3~~ cr):

NRS 573	Planning & Decision Making for Watershed Management	3 cr
FOR 584	Natural Resource Policy Development	3 cr

## ~~Human Dimensions Course Group (3 cr):~~

<del>NRS 572</del>	<del>Human Dimensions of Restoration Ecology</del>	<del>3 cr</del>
ENVS 536	Principles of Sustainability	3 cr
NR 507	Moral Reasoning in Natural Resources	3 cr
<a href="#">FOR 454</a>	<a href="#">Air Quality, Pollution, and Smoke</a>	<a href="#">3 cr</a>
<a href="#">FOR 554</a>	<a href="#">Air Quality, Pollution, and Smoke</a>	<a href="#">3 cr</a>

[\\*FOR 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 \(but not both\).](#)

## [Final Project \(2 cr\):](#)

<a href="#">NR 599</a>	<a href="#">Non-Thesis Research</a>	<a href="#">1-16 cr</a>
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Additional [elective](#) graduate courses to total [a minimum of 30 credits](#) ~~(2-3 cr)~~

**Courses to total 30 credits for this degree**

## NATURAL RESOURCES AND SOCIETY

1. Add the following courses:

### **NRS 592 Emerging Media Outreach in Natural Resources (3 cr)**

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.

2. Change the following courses:

### **NRS 506 Fundamentals of Research (4 cr)**

Research approaches, designs, and methods [ologies](#) as applied in [biophysical and social science](#) natural resources, ~~leisure, and tourism~~ professions. [Cooperative: open to WSU degree-seeking students. \(Fall only\)](#)

**Prereq:** Basic Statistics

3. Make the following curricular changes to the **Natural Resource Conservation Major** (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	Society and Natural Resources	3 cr
NRS 310	Social Science Methods	4 cr
<a href="#">NRS 311</a>	<a href="#">Public Involvement in Natural Resource Management</a>	<a href="#">3 cr</a>
NRS 383	Natural Resource and Ecosystem Service Economics	3 cr
NRS 387	Environmental Communication Skills	3 cr
ECON 202	Principles of Microeconomics	3 cr

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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	Principles of Ecology	3 cr
<a href="#">NRS 498</a>	<a href="#">Internship</a>	<a href="#">1-6 cr</a>

## 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

To graduate a student must earn an average GPA 2.30 or higher in all NRS courses.

<del>NRS 311</del>	<del>Public Involvement in Natural Resource Management</del>	<del>3 cr</del>
NRS 364	Politics of the Environment	3 cr
<del>NRS 383</del>	<del>Natural Resource and Ecosystem Service Economics</del>	<del>3 cr</del>
NRS 411	Environmental Project Management and Decision Making	4 cr
NRS 462	Natural Resource Policy	3 cr
NRS 475	Conservation Planning and Management	4 cr
<del>NRS 498</del>	<del>Internship</del>	<del>1-6 cr</del>
PSYC 101	Introduction to Psychology	3 cr
SOC 101	Introduction to Sociology	3 cr

## One of the following (4 cr):

BIOL 102	Biology and Society AND BIOL 102L	3 cr
BIOL 102L	Biology and Society Lab	1 cr
BIOL 115	Cells & the Evolution of Life AND BIOL 115L	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 One semester of a foreign language course	2 cr 3-4 cr
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## One of the following (3 cr):

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

## One of the following (3 cr):

ENGL 313	Business Writing	3 cr
ENGL 316	Environmental Writing	3 cr
ENGL 317	Technical Writing	3 cr

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ENGL 322 Environmental Literature and Culture 3 cr

### One of the following (3 cr):

ENVS 225 International Environmental Issues Seminar 3 cr

IS 322 International Environmental Organizations 3 cr

### One of the following (3 cr):

AGEC 477 Law, Ethics and the Environment 3 cr

ENVS 479 Introduction to Environmental Regulations 3 cr

NRS 386 Social-Ecological Systems 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 3 cr  
AND

GEOL 101L Physical Geology Lab 1 cr

### One of the following (3-4 cr):

[NRS 472/](#) [Remote Sensing of the Environment](#) [4 cr](#)

[FOR 472](#) [Remote Sensing of Fire](#) [3 cr](#)

[FOR 435](#) [Wildland Restoration Ecology](#) [3 cr](#)

[NRS 440/](#) [Wildland Restoration Ecology](#) [3 cr](#)

[REM 440](#) [Wildland Restoration Ecology](#) [3 cr](#)

### One of the following (~~6-8~~3-4 cr):

BIOL 314 Ecology and Population Biology 4 cr

FOR 326 Fire Ecology and Management 3 cr

~~NRS 472 Remote Sensing of the Environment 4 cr~~

REM 429 Landscape Ecology 3 cr

REM 340 Ethnobotany 2 cr

~~REM 440 Wildland Restoration Ecology 3 cr~~

[NRS 450/](#) [Global Environmental Change](#) [3 cr](#)

[REM 450](#) [Global Environmental Change](#) [3 cr](#)

REM 459 Rangeland Ecology 2 cr  
AND

REM 460 Integrating GIS and Field Studies in Rangelands 2 cr

WLF 440 Conservation Biology 3 cr

### Contract Courses (12-18 cr)

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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>).

### 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.

##### 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 411	Environmental Project Management and Decision Making	4 cr
NRS 475	Conservation Planning and Management	4 cr
NRS 490	Wilderness and Protected Area Management	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

##### One of the following (3 cr):

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

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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

### 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 and Renewable Materials (69 cr):

FOR 275	Forestry Resource Sampling	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
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	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/ MKTG 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

### 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. Change the following course:

**Biol 250 General Microbiology (3 cr)**

Gen Ed: Natural and Applied Sciences

Introduction to nature and activity of bacteria and other microorganisms; their importance in all life systems.

Three hours of lec per week. (Fall only)

**Prereq:** [Biol 115](#) and either Chem 101 or Chem 111

2. Drop the following courses:

**Biol 495 Research in Molec/Cell/Dev Biology (cr arr)**

*Gen Ed: Senior Experience*

Directed research in faculty laboratory.

**Prereq:** Permission

**Biol 496 Research in Ecology and Evolution (cr arr)**

*Gen Ed: Senior Experience*

Directed research in faculty laboratory.

**Prereq:** Permission

**Biol 497 Research in Anatomy and Physiology (cr arr)**

*Gen Ed: Senior Experience*

Directed research in faculty laboratory.

**Prereq:** Permission

3. Make the following curricular changes to the **Major in Medical Sciences (B.S.)**:

...

**Leadership and Professional (~~5~~2-3 cr):**

BIOL 398	Internship	1-3 cr - Max 3 cr
MHR 311	Introduction to Management	3 cr
INTR 492	College of Science Ambassadors	1 cr - Max 8 cr
INTR 496	Pre-Health Peer Mentors	1-4 cr - Max 4 cr
PHIL 361	Professional Ethics	3 cr - Max 6 cr
PSYC 414	Traumatic Events: Preparation, Intervention, Evaluation	3 cr

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**Courses to total 120 credits for this degree**

**BIOINFORMATICS AND COMPUTATIONAL BIOLOGY**

1. Change the following course:

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### BCB 501 (s) Seminar (cr arr)

[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.](#)

## CHEMISTRY

1. Add the following courses:

### CHEM 101L Introduction to Chemistry Laboratory (1 cr)

*Gen Ed: Natural and Applied Sciences*

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 112. One 3-hour lab a week.

**Prereq or Coreq:** Chem 101

### CHEM 111L Principles of Chemistry I Laboratory (1 cr)

*Gen Ed: Natural and Applied Sciences*

This is the companion laboratory course to Chem 111 and provides an intensive treatment of Chemistry lab practices. One 3-hour lab a week.

**Prereq or Coreq:** Chem 111

### CHEM 112L Principles of Chemistry II Laboratory (1 cr)

*Gen Ed: Natural and Applied Sciences*

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 a week.

**Prereq or Coreq:** Chem 112

2. Change the following courses:

### Chem 101 Introduction to Chemistry ~~4~~ (43 cr)

*Gen Ed: Natural and Applied Sciences*

Full credit may be earned in only one of the following: Chem 101 or Chem 111. General treatment of the fundamentals of chemistry. ~~Three lec and one 3-hr lab a wk.~~ Does not satisfy the prereq for Chem 112.

### Chem 111 Principles of Chemistry I (43 cr)

*Gen Ed: Natural and Applied Sciences*

Full credit may be earned in only one of the following: Chem 101, or 111. Note that grades in Chem 111 will supersede any grades earned in Chem 101. Intensive treatment of principles and applications of chemistry. ~~Three lec and one 3-hr lab a week.~~ Recommended Preparation: A grade of 'B' or better in a high school chemistry course.

**Prereq:** ~~Chem 050 or~~ min 580 SAT math or min 25 ACT math ~~or min 49 COMPASS College Algebra,~~ [or min 46 ALEKS math](#); or a grade of 'C' or better in Chem 101, Math 143, Math 160, or Math 170; or Permission

### Chem 112 Principles of Chemistry II (54 cr)

*Gen Ed: Natural and Applied Sciences*

Continuation of Chem 111. Some work in inorganic chemistry, kinetics, equilibrium, liquids, solids, acid-base, electrochemistry, nuclear chemistry, thermodynamics, and qualitative inorganic analysis. Three lec, ~~and one 3-hr lab a wk.~~ [and](#) one recitation,

**Prereq:** Chem 111 [and Chem 111L](#) or Permission

### Chem 305 Physical Chemistry I (3 cr)

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Kinetic theory, thermodynamics, ~~quantum mechanics, and spectroscopy.~~ [\(work, heat and energy\)](#); [state functions, thermochemistry, the second law of thermodynamics; free energy and mixtures; electrolyte solutions and phase equilibrium; chemical and electrochemical equilibrium.](#) (Fall only)

**Prereq:** Chem 112, [Chem 112L](#), and Math 275

~~**Prereq or Coreq:** Phys 212 or Phys 213~~

### Chem 306 Physical Chemistry II (3 cr)

Kinetic theory, ~~thermodynamics,~~ [atomic and molecular structure,](#) quantum mechanics, [statistical mechanics,](#) ~~and spectroscopy.~~ (Spring only)

**Prereq:** ~~Chem 112 and Math 275~~ [Chem 305](#)

~~**Prereq or Coreq:** Phys 212 or Phys 213~~

## GEOGRAPHY

1. Add and joint-list the following courses:

### GEOG 565 Political Geography (3 cr)

See GEOG J365/J565.

### GEOG 531 Urban Geography (3 cr)

See GEOG J330/J531.

2. Change the following courses and revise the joint-listing:

### Geog ~~J412~~[401](#)/J512 ~~Applied Meteorology and Climatology~~ (3 cr)

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/yr)

~~**Prereq:** Geog 301 or Geog 401; or Permission~~

### Geog 512 ~~Applied Meteorology and Climatology~~ (3 cr)

See Geog ~~J412~~[401](#)/J512.

3. Change the following courses:

### Geog ~~J330~~[J531](#) Urban Geography (3 cr)

Theory and models of the functions, origin, development, structure, and distribution of cities; land-use ~~classification and housing;~~ [globalization and cities, neighborhood transition, urban economic development, and geographic aspects of city planning.](#) ~~One hour additional meeting per week or project for fourth credit. One 1-day field trip. (Fall only)~~ [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 ~~J365~~[J565](#) Political Geography (3 cr)

*Gen Ed: Social Science, International*

~~A survey of the geographical framework of the State and its development over the last 400 years. An examination of the ideas of geopolitics and the role of hegemony in interstate relations as well as the geographical implications of globalization are emphasized. The creation of diverse political landscapes of actual and imagined communities and their impact on ideas of nationalism and electoral behavior are also discussed. (Alt/yr)~~ [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](#)

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[natural resources, nationalism, elections, democratization, globalization, terrorism, and the politics of identity.](#)  
[Graduate students are required to complete an additional independent research paper.](#)

## Geog J407/J507 Spatial Statistics and Modeling (3 cr)

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 grad credit. [Cooperative: open to WSU degree-seeking students.](#)

**Prereq:** Stat 431 or permission

## Geog J435/J535 Climate Change Mitigation (3 cr)

~~Overview of methodologies for calculating greenhouse gas (GHG) emissions at the national, state and local level. Cost/benefit analysis of emission reduction strategies. Students utilize the UI campus operations as a learning laboratory for evaluating emission reduction strategies at the local level. Idaho is used as a case study for emission reduction strategies at the state level. For graduate credit, additional literature review and evaluation of new, advanced technologies are required.~~ [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.](#)

## Geog J483/J583 Remote Sensing/GIS Integration (3 cr)

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 reqd for grad cr. Two [lecture](#) and 2 [hour](#) of lab a [week](#).

**Prereq:** ~~For 472 or equiv, and Stat 251~~

**Coreq:** Geog 385 or Equivalent

## Geog 493 Senior Capstone in Geography (3 cr)

Gen Ed: 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 non-majors with instructor's permission.

**Prereq:** [Geog 489](#), Department of Geography Majors or Permission

### 4. Make the following curricular changes to the **Major in Geography (B.S.)**

This program is offered through the College of Science. Required course work includes the university requirements (see regulation J-3) and:

*Note: Students must earn a grade of "C" or better in all Geography courses.*

GEOG 100	Physical Geography	3 cr
GEOG 100L	Physical Geography Lab	1 cr
GEOG 165	Human Geography	3 cr

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GEOG 200	World Regional Geography	3 cr
GEOG 313	Global Climate Change	3 cr
GEOG 385	GIS Primer	3 cr
GEOG 390	Cartographic Design & Geovisualization	3 cr
<a href="#">GEOG 489</a>	<a href="#">Capstone Preparation</a>	<a href="#">1 cr</a>
GEOG 493	Senior Capstone in Geography	3 cr
STAT 251	Statistical Methods	3 cr

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### GEOLOGICAL SCIENCES

1. Add and joint-list the following courses:

#### **Geol J431/J531 Chemical Hydrology (3 cr)**

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.

**Prereq:** Chem 111

#### **Geol 531 Chemical Hydrology (3 cr)**

See Geol J431/J531.

#### **Geol J424/J520 Advanced Topics in Sedimentary Rocks (3 cr)**

Modern concepts of tectonic sedimentology, depositional environments, facies models, and application of analytical techniques to stratigraphic sequences. 520 students will have an additional research project. One 5-day field trip. Prerequisite: GEOL 324.

**Prereq:** Geol 324

2. Reactivate, change, and and joint-list the following course:

#### **Geol 520 (s) Advanced Topics in Sedimentary Rocks (2-3 cr, max 6)**

~~Modern aspects of sedimentary rocks.~~ See [Geol J424/J520](#).

~~Prereq: Geol 324~~

3. Add, joint list, and make cooperative the following courses:

#### **Geol J435/J535 Glaciology and the Dynamic Frozen Earth (3 cr)**

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 500-level credit. Cooperative: open to WSU degree-seeking students.

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**Prereq:** Math 160 or Math 170

### **Geol 535 Glaciology and the Dynamic Frozen Earth (3 cr)**

See Geol J435/J535.

4. Change the following courses:

#### **Geol J407/J507 Basin Analysis (3 cr)**

Formation mechanisms and characteristics of sedimentary basins. Modern concepts of tectonics and sedimentary basin analysis, including ~~geologic application of provenance, thermal and subsidence histories, and sequence stratigraphy~~ [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. [For 500-level credit an additional paper is required.](#) One 2-day [and one 5-day](#) field trip. Cooperative: open to WSU degree-seeking students. (Spring only)

**Prereq:** Geol 324 [and Math 143 with a grade of C or better](#)

#### **Geol 490 [Geology Field Camp](#) ~~Geology-II~~ (3 cr)**

*Gen Ed: Senior Experience*

Advanced field problems and methods; interpretation of field data, preparation of reports based on field observations and interpretations. Accident and health insurance required. Three weeks, off-campus. Cooperative: open to WSU degree-seeking students. (Summer only)

**Prereq:** Geol 290 and Geol 345; and Math 143 with a grade of 'C' or better

#### **Hydr 576 Fundamentals of Modeling Hydrogeologic Systems (3 cr)**

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.](#)

**Prereq:** Math 275 or Permission

5. Drop the following courses:

#### **Geol J464/J564 The Geochemistry of Natural Waters (3 cr)**

Basic principles of aqueous geochemistry applied to natural waters (groundwaters, lake and river waters, seawater), presented at an intermediate level; carbonate equilibria and alkalinity, solubility of minerals, sorption processes and surface reactions, redox reactions and Eh-pH diagrams, organic geochemistry, etc. For graduate credit, students are required to complete an additional independent research paper Recommended preparation: Geol 423.

**Prereq:** Chem 111

#### **Geol 564 The Geochemistry of Natural Waters (3 cr)**

See Geol J464/J564.

## MATHEMATICS

1. Change the following courses:

#### **Math 390 Axiomatic Geometry (3 cr)**

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May be used as core credit in J-3-d. Development of Euclidean and hyperbolic geometry using the axiomatic approach. Recommended Preparation: Math 215.

**Prereq:** High school geometry and Math ~~176330~~, or [Instructor](#) Permission

### **Math 391 Modern Geometry (3 cr)**

Euclidean and non-Euclidean geometries, plus topics chosen from projective, transformational, and computational geometry. Recommended Preparation: Math 215.

**Prereq:** High School Geometry and Math ~~176330~~, or [Instructor](#) Permission

### **Math 430 Advanced Linear Algebra (3 cr)**

Vector spaces, linear transformations, characteristic polynomial, eigenvectors, Hermitian and unitary operators, inner products, quadratic forms, Jordan canonical form, applications. ~~Recommended Preparation: Math 215.~~

**Prereq:** [Math 215 and](#) Math 330 or [Instructor](#) Permission

### **Math 438 Mathematical Modeling (3 cr)**

Topics in the use of mathematics to model phenomena from science, business, economics, and engineering.

**Prereq:** [CS 120](#), Math 310 and Math 330, or [Instructor Permission](#)

## STATISTICAL SCIENCE

1. Add the following courses:

### **STAT 427 R Programming (3 cr)**

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.

**Prereq:** Stat 251 or Stat 301 or Stat 416

### **Stat 535 Introduction to Bayesian Statistics (3 cr)**

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.

**Prereq:** Stat 431 or equivalent paperwork

2. Add and joint-list the following courses:

### **STAT J436/J516 Applied Regression Modeling**

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.

**Prereq:** Stat 431

### **Stat J437/507 Experimental Design (3 cr)**

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;

