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 2015 unless otherwise noted with the approved item.

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Agricultural Economics and Rural Sociology

1. Change the following course:

AgEc 525  Master’s Econometrics (3 cr)
Same as Stat 525. Sampling techniques, Multivariate linear regression and analysis of variance with economic applications. Cooperative: open to WSU degree-seeking students.
Prereq: 3 cr in statistics Stat 431 or equivalent; or Permission of Instructor

2. Change the curricular requirements of Applied Economics (M.S.):

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Agricultural Economics and Rural Sociology. See the College of Graduate Studies section for the applicable general requirements.

Master of Science, Major in Applied Economics. The M.S. program in applied economics is designed to prepare students for management, research, and policy positions in the public and private sectors of the economy, and for further graduate study.

The M.S. thesis option is offered as a 32 credit stand-alone degree or as a 32 credit thesis degree with optional emphasis area(s). The minimum of 32 required credits can be satisfied by taking a combination of 500 and 400 level courses, with at least 18 credits at 500 level, plus no more than 3 credits of 300 level courses in supporting areas.

An emphasis may be selected in any of the following three areas: Agricultural Economics; Natural Resources; Agribusiness. Both thesis options include six letter graded thesis credits (AgEc 500) and 26 credits of course work including the following: AgEc 506 (0 cr), AgEc 525 (3 cr), AgEc 526 (3 cr), AgEc 527 (3 cr), AgEc 529 (2 cr), and 15 credits of AgEc electives.

A student has the option to not pursue an emphasis in which case the student must complete as part of the 15 credits of AgEc electives, 6-9 credits chosen from the following courses: AgEc 532 (3 cr), AgEc 533(3 cr), AgEc 534 (3 cr), AgEc 535 (3 cr), and either AgEc 586 (3 cr) or AgEc 587 (3 cr).

If an emphasis area is chosen, two courses must be selected from those specifically listed in that emphasis area, which will be used as part of the 15 credits of AgEc electives. Emphasis areas are: Agribusiness: AgEc 535 (3 cr) & either AgEc 533 or AgEc 534 (3 cr); Agricultural Economics: AgEc 534 (3 cr) & AgEc 535 (3 cr); or Natural Resources: AgEc 532 (3 cr) and one additional course (3 cr). More than one emphasis area may be completed as long as each emphasis area requirement is met. However, only the declared emphasis area will appear on the student’s transcript.

Students may take a non-thesis option M.S. degree. Under this option a student will take a minimum of 32 credits of course work including the 26 credits of departmental course requirements, which are the same as the stand-alone thesis option. For the non-thesis option, a three-credit paper will be written and presented by the student addressing a topic determined jointly by the student and the student’s graduate committee. This option is only available for students not receiving financial support from research funds.

Art and Architecture

1. Add the following course:

Arch J416/J516 Social Sustainability in Contemporary Cities (3 cr)
Seminar provides an overview of the social dimension of sustainability and its related issues in contemporary cities in the world. Exploration of concepts and strategies of social urban sustainability through case studies to critically evaluate urban governance and policies in both developed and developing countries, and assessment of struggles for social justice and equality. Additional projects/assignments required for graduate credit.

Recommended Short Course Title: Urban Social Sustainability
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Arch J432/J532 Advanced Analog Graphics (3 cr)
Advanced sketchbook and large-format drawing development focused on the built environment. Analog (i.e. physical) media, including graphite, Ink and watercolor. Additional projects/assignments required for graduate credit.
Prereq: Arch 154 and Arch 254; or Permission

Art 217 Ancient & Pre-Modern Art (3 cr)
A survey of ancient to early modern art, covering the period from classical antiquity through neoclassicism and the industrial revolution. Particular care will be taken to situate the art, architecture, and design of each period in its cultural, political, and religious contexts. Basic methods and approaches of art history will be also be covered. Classes will be mostly lectures, with discussion of primary sources. No prior experience with art or history is required.

ID 243 Digital Design Tools for Architecture and Interior Design (2 cr)
See Arch 243

ID 244 Computer Aided Drafting and Modeling (2 cr)
See Arch 244.

ID 415 Design Management (3 cr)
This course aims to provide a foundation of business knowledge that will prepare design students to work in management. This is a lecture and case study based class. Open to Juniors, Seniors and Graduate students.

2. Reactivate and change the following course:

Art 360 Intermediate/Advanced Ceramics (3 cr, max 9)
Intermediate and Advanced level studio environment with further exploration of ceramic methods including wheel-thrown building techniques, kiln and studio procedures, creative autonomy, portfolio development, and comprehension of historical and contemporary issues relevant to studio projects and ceramics discourse. Two 3-hr studios a wk and assigned work. Development and articulation of individual design criteria in ceramics; development of personal conceptual and technical skills in ceramics. Two 3-hr studios a wk and assigned work.
Prereq: Art Core, Art 261 or Permission

Recommended Short Course Title: Int/Adv Ceramics

3. Change the following courses:

Arch 154 Introduction to Architectural Graphics (3 cr)
Introduction to architectural graphics; two 1-hour lecture sessions per week, plus two 1-hour studio sessions per week; weekly assigned drawing projects, readings, and sketchbook projects; periodic quizzes. Cooperative: open to WSU degree-seeking students.

Arch 243 Digital Design Tools for Architecture and Interior Design (2 cr)
Same as ID 243. Introduction to software programs for use in designing the built environment. Including but not limited to 3-D modeling. (8 weeks)
Prereq: Arch 154

Arch 244 Computer Aided Drafting and Modeling (2 cr)
Same as ID 244. Introduction to computer-aided drafting and modeling techniques and applications.
Prereq: Arch 154

Arch J421/J521 China Program Preparation Seminar (2 cr)
Seminar course preparing students for summer study abroad program in China. This course will introduce travelling, money management, safety, visa application, and some basic cultural introductions. Also, this class will introduce the academic courses to be undertaken in China and prepare research data collection. Required for all students enrolled in the China program. Cooperative: open to WSU degree-seeking students. (Spring only)
Prereq: Arch 353 or LArc 353

Arch 430 Rome Preparatory Seminar (2 cr)
Seminar preparing students for summer study abroad in Rome, Italy. Introduces academic courses to be taken in Rome, and begins research and information-gathering tasks for Design Studio and Rome Design History courses. Also includes practical matters such as travel planning, money, safety, and basic language skills. Cooperative: open to WSU degree-seeking students. (Spring only)

Arch 580 British Green Architecture (2 cr)
Preparation for students who will participate in the summer studies abroad program in London, including basic research on green building in the UK, helping plan the itinerary. All logistical preparations for studies abroad will be discussed and students are familiarized with both green approaches to design and British culture. Cooperative: open to WSU degree-seeking students. (Spring only)

Art 261 Ceramics I (3 cr)
Introductory studio environment with emphasis on basic design principles and techniques, hand-built forming methods, development and articulation of individual design criteria, and glaze and surface experimentation. Two 3-hr studios a wk and assigned work. Intro to clay-forming techniques, wheel-thrown and hand-built forming methods, ceramic design concepts, development and articulation of individual design criteria, glaze experimentation; fundamental types of ceramic ware; kiln and studio procedures. Two 3-hr studios a wk and assigned work.
Art 272  Interaction Design II Experiential Design I (3 cr)
Introduction to Experiential Design strategies and methodologies that focus upon immersive storytelling and place making, and the interfaces that connect content to environments. Exercises and projects assigned will analyze and explore the use of rich media, technology, and interface design. Introduction to time-based (narrative) design strategies and how they are utilized as tools of communication in interaction design. Analysis of various case studies that use narrative storytelling as a means to communicate information. Industry standard Digital Design and Motion Design software will be introduced. Demos and topic discussion including a wide variety of time-based mediums (video, animation, motion design, stop-motion). Recommended Preparation: Basic knowledge of digital design software or Art 216 (strongly recommended).

Art 370 Intermediate/Advanced Interaction + Experiential Design (3 cr, max 9)
Advance 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. Two 3-hr studios a week and assigned work. Advance analysis of both design and development techniques, and strategies used in various interactive mediums. Relevant industry standard programming languages will be introduced throughout semester. Discussions, exercises and projects assigned will address interactive design best practices, trends and current industry standards.
Prereq: Art 271 or Art 272 or Permission

Recommended Short Course Title: Int/Adv Interact+Experiential

Art 597 (s) Practicum (3 cr, max 6)
Open only to art majors. Classroom assistance in teaching and preparation of course materials. Hands-on experience in classroom teaching and gallery practice conducted under supervision of faculty or gallery director supervision. Normally requires 4-6 hrs a wk in class and assigned work.
Prereq: Major in the College of Art and Architecture or Permission of individual faculty and art graduate coordinator

ID 410 Capstone Proposal Development (1-2 cr)
Capstone Studio proposal development requiring systematic approach to the development of project proposal in preparation for ID 452. 8 week course/1 credit hour course.
Coreq: ID 451

4. Change the curricular requirements of Interior Design (B.I.D.):

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

Arch 151 Introduction to the Built Environment (2 cr)
Arch 154 Introduction to Architectural Graphics (3 cr)
Arch 243 Digital Design Tools for Architecture and Interior Design (2 cr)
Arch 244 Computer Aided Drafting and Modeling (2 cr)
Arch 253 Architectural Design I (3 cr)
Arch 266 Materials and Methods (3 cr)
Arch 285 History of Architecture I (3 cr)
Arch 286 History of Architecture II (3 cr)
Arch 463 Environmental Control Systems I (3 cr)
Arch 463L Environmental Control Systems I Lab (1 cr)
Arch 464 Environmental Control Systems II (3 cr)
Arch 464L Environmental Control Systems II Lab (1 cr)
Arch 475 Professional Practice (3 cr)
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)
ID 151 Introduction to Interior Design (3 cr)
ID 152 Interior Design I (3 cr)
ID 243 Digital Design Tools for Architecture and Interior Design (2 cr)
ID 244 Computer Aided Drafting and Modeling (2 cr)
ID 254 Architectural Design II (4 cr)
ID 281 History of Interiors I (3 cr)
ID 282 History of Interiors II (3 cr)
ID 332 Furniture Design and Construction (3 cr)
ID 351 Interior Design III (6 cr)
ID 352 Interior Design IV (6 cr)
ID 368 Materials and Specifications (3 cr)
ID 404 Special Topics (2 cr)
ID 410 Capstone Proposal Development (2 cr)
ID 443 Universal Design (3 cr)
ID 451 Interior Design VI (6 cr)
ID 452 Interior Design VI (6 cr)

Courses to total 127-125 credits for this degree (including 3 cr from a list of advisor-directed electives)
**Biological Sciences**

1. Add the following courses:

   **Biol 301 Undergraduate Research (1-4 cr, max 8)**
   Undergraduate research for students without senior standing.
   *Prereq: Permission*

   **Biol 416 Plant Diversity and Evolution (4 cr)**
   Origin, evolution, and diversity of major land plant groups; emphasis on systematics, anatomy, morphology, ecological diversity, and macroevolution. Two lec and one 3-hr lab a wk; one field trip. Cooperative: open to WSU degree-seeking students. (Fall only)
   *Prereq: Biol 114 and Biol 115*

   **Biol J460/J560 Advanced Field Botany (3 cr)**
   Hands-on training in field botany as applied to evolutionary, ecological, and floristic studies; two-week field course in the Inland Northwest. Additional projects/assignments reqd for grad cr. (Summer only)
   *Prereq: Instructor Permission*

   **Biol 536 Phylogenetics Reading Group (1 cr)**
   Review recent articles in phylogenetics and systematics journals. Students choose, critically review, and discuss the articles to develop critical-thinking skills and confidence in their knowledge of the literature. Graded P/F. Cooperative: open to WSU degree-seeking students.

2. Reactivate and change the following course:

   **Biol 484 Invertebrate Zoology (4 cr)**
   Morphology of freshwater, marine, and terrestrial invertebrates and phylogeny of major groups. Three lec and one 3-hr lab a wk.
   *Prereq: Biol 114 and Biol 115 and 116*

3. Change the following courses:

   **Biol 116 Organisms and Environments (4 cr)**
   The evolution of diversity, the biology of plants and animals, and their environments. Three lec and one 3-hr lab a wk.
   *Prereq: Biol 115 and Chem 101 or 111*

   **Biol 401 Undergraduate Research (1-4 cr, max 8)**
   Same as MMBB 401. Individual Study. Undergraduate research at the senior level.
   *Prereq: Senior Standing and Permission of Instructor*

   **Biol 456 Computer Skills for Biologists (3 cr)**
   Management and analysis of complicated datasets such as those in molecular evolution, systematics, and genomics. Demonstrations, exercises, and student projects to teach advanced Unix skills, programming (e.g. Perl and R), and data management. Cooperative: open to WSU degree-seeking students. (Fall, alt/even yrs)
   *Prereq: Biol 310; and Stat 251 or Stat 301; or Permission*

   **Biol 522 Molecular Evolution (3 cr)**
   Understanding evolutionary processes and patterns at the molecular level, techniques for using genetic and genomic data understand evolutionary history of organisms, 3 lectures per week. Cooperative: open to WSU degree-seeking students.
   *Prereq: Undergraduates require permission of instructor*

   **Biol 545 Principles of Systematic Biology (3 cr)**
   The inference of evolutionary trees (phylogeny) and the processes that generate biodiversity from analyses of morphological, molecular, and behavioral data; uses of phylogenies in testing evolutionary and other hypotheses at both inter and intraspecific levels. Two hrs of lec and one 3-hr lab a wk. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yr)
   *Prereq: PlSc 205 or Biol 213; and Biol 310*

   **MMBB Biol 154 Introductory Microbiology (3 cr)**
   Carries no credit after Biol 250. May be taken by microbiology majors, but carries no cr after Biol 250. Introduction to microorganisms and their role in disease, health, foods, and the environment; current topics in microbiology. (Spring only)

4. Change the curricular requirements of **Biochemistry (B.S.Biochem.):**

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

   **Biol 101 Perspectives in Biology (1 cr)**
   **Biol 114 Organisms and Environments (4 cr)**
   **Biol 115 Cells and the Evolution of Life (4 cr)**
   **Biol 310 Genetics (3 cr)**
   **Biol 312 Molecular and Cellular Biology (3 cr)**
   **Biol 313 Molecular and Cellular Laboratory (1 cr)**
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5. Change the curricular requirements of Biology (B.S. or B.A.):

To graduate in this program, students must earn a minimum grade of C in Biol 114 and Biol 115, and Biol 116 and must have a minimum gpa of 2.40 in Biol 115, Biol 116, Biol 213, Biol 310, and Biol 312.

Required course work includes the university requirements (see regulation J-3) and the following major requirements (electives to be chosen in consultation with the departmental advisor).

Biol 101 Perspectives in Biology (1 cr)
Biol 114 Organisms & Environments (4 cr)
Biol 115 Cells and the Evolution of Life (4 cr)
Biol 116 Organisms & Environments (4 cr)

Courses to total 120 credits for this degree
<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 213</td>
<td>Principles of Biological Structure and Function (4 cr)</td>
</tr>
<tr>
<td>Biol 310, Biol 315</td>
<td>Genetics and Lab (4 cr)</td>
</tr>
<tr>
<td>Biol 312</td>
<td>Molecular and Cellular Biology (3 cr)</td>
</tr>
<tr>
<td>Biol 313</td>
<td>Molecular and Cellular Laboratory (1 cr)</td>
</tr>
<tr>
<td>Biol 314</td>
<td>Ecology and Population Biology (4 cr)</td>
</tr>
<tr>
<td>Biol 315</td>
<td>Genetics Lab (1 cr)</td>
</tr>
<tr>
<td>Biol 400</td>
<td>Seminar (1 cr)</td>
</tr>
<tr>
<td>Biol 421</td>
<td>Advanced Evolutionary Biology (3 cr)</td>
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<tr>
<td>Chem 111</td>
<td>Principles of Chemistry I (4 cr)</td>
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<tr>
<td>Chem 112</td>
<td>Principles of Chemistry II (5 cr)</td>
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<tr>
<td>Chem 277, Chem 278</td>
<td>Organic Chemistry and Lab (4 cr)</td>
</tr>
<tr>
<td>Math 170</td>
<td>Analytic Geometry and Calculus I (4 cr)</td>
</tr>
<tr>
<td>Phys 111, Phys 111L</td>
<td>General Physics I and Lab (4 cr)</td>
</tr>
<tr>
<td>Phys 112, Phys 112L</td>
<td>General Physics II and Lab (4 cr)</td>
</tr>
<tr>
<td>Stat 251</td>
<td>Statistical Methods (3 cr)</td>
</tr>
<tr>
<td>One of the following (3-4 cr): Biol 300, Biol 380</td>
<td>Survey of Biochemistry (3 cr)</td>
</tr>
<tr>
<td>One of the following Senior Experience Courses (2 cr): Biol 401</td>
<td>Undergraduate Research (1-4 cr, max 8)</td>
</tr>
<tr>
<td>Biol 405</td>
<td>Practicum in Anatomy Laboratory Teaching (2 cr)</td>
</tr>
<tr>
<td>Biol 407</td>
<td>Practicum in Biology Laboratory Teaching (2 cr)</td>
</tr>
<tr>
<td>Biol 408</td>
<td>Practicum in Human Physiology Laboratory Teaching (2 cr)</td>
</tr>
<tr>
<td>Biol 411</td>
<td>Senior Capstone (2 cr)</td>
</tr>
<tr>
<td>One of the following (3 cr): Engl 207</td>
<td>Persuasive Writing (3 cr)</td>
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<tr>
<td>Engl 208</td>
<td>Personal and Exploratory Writing (3 cr)</td>
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<tr>
<td>Engl 317</td>
<td>Technical Writing (3 cr)</td>
</tr>
<tr>
<td>One of the following (4 cr): Phys 111, Phys 111L</td>
<td>Engineering Physics I and Lab (4 cr)</td>
</tr>
<tr>
<td>Phys 211, Phys 211L</td>
<td>Engineering Physics II and Lab (4 cr)</td>
</tr>
<tr>
<td>One of the following (3 cr): Stat 251</td>
<td>Statistical Methods (3 cr)</td>
</tr>
<tr>
<td>Stat 301</td>
<td>Probability and Statistics (3 cr)</td>
</tr>
<tr>
<td>One of the following (2 cr): Biol 405</td>
<td>Practicum in Anatomy Laboratory Teaching (2 cr)</td>
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<tr>
<td>Biol 407</td>
<td>Practicum in Biology Laboratory Teaching (2 cr)</td>
</tr>
<tr>
<td>Biol 408</td>
<td>Practicum in Human Physiology Laboratory Teaching (2 cr)</td>
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<tr>
<td>Biol 411</td>
<td>Senior Capstone (2 cr)</td>
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<tr>
<td>Biol 495</td>
<td>Research in Molec/Cell/Dev Biology (2 cr)</td>
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<tr>
<td>Biol 496</td>
<td>Research in Ecology and Evolution (2 cr)</td>
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<tr>
<td>Biol 497</td>
<td>Research in Anatomy and Physiology (2 cr)</td>
</tr>
<tr>
<td>One of the following (4 cr): Chem 275, Chem 276</td>
<td>Carbon Compounds and Lab (4 cr)</td>
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<tr>
<td>Chem 277, Chem 278</td>
<td>Organic Chemistry and Lab (4 cr)</td>
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<tr>
<td>One of the following (4 cr): Math 160</td>
<td>Survey of Calculus (4 cr)</td>
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<tr>
<td>Math 170</td>
<td>Analytic Geometry and Calculus I (4 cr)</td>
</tr>
<tr>
<td>One of the following (3-4 cr): Biol 300</td>
<td>Survey of Biochemistry (3 cr)</td>
</tr>
<tr>
<td>Biol 380</td>
<td>Biochemistry I (4 cr)</td>
</tr>
</tbody>
</table>

**Note:** Students considering graduate school in biology are strongly encouraged to take Math 170, Chem 277/278, and Biol 380. 9-14 credits of approved electives from the following list are required. (Categories are intended only as a guide for student and advisor use). Additional classes can be substituted with prior approval of adviser and chairperson.
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**Biol 324**  
Comparative Vertebrate Anatomy (4 cr)  
**Biol 416**  
Plant Diversity and Evolution (4 cr)  
**Biol 423**  
Comparative Vertebrate Physiology (3 cr)  
**Biol 425**  
Special Topics: Experimental Field Ecology (3 cr)  
**Biol 428**  
Microscopic Anatomy (4 cr)  
**Biol 432**  
Immunology (3 cr)  
**Biol 444**  
Genomics (3 cr)  
**Biol 448**  
Plant-Animal Interactions (3 cr)  
**Biol 456**  
Computer Skills for Biologists (3 cr)  
**Biol 460**  
Advanced Field Botany (3 cr)  
**Biol 461**  
Neurobiology (3 cr)  
**Biol 474**  
Principles of Developmental Biology (3 cr)  
**Biol 476**  
Animal Behavior (3 cr)  
**Biol 482**  
Protein Structure and Function (3 cr)  
**Biol 483**  
Mammalogy (3 cr)  
**Biol 484**  
Invertebrate Zoology (4 cr)  
**Biol 487**  
Eukaryotic Molecular Genetics (3 cr)  
**Biol 489**  
Herpetology (4 cr)  
**Chem 414**  
Applications of Nanomaterials in Biomolecular Engineering (3 cr)  
**Ent 441**  
Insect Ecology (3 cr)  
**Fish 481**  
Ichthyology (4 cr)  
**Math 437**  
Mathematical Biology (3 cr)  
**PlSc 415**  
Plant Pathology (3 cr)  
**PlSc 440**  
Advanced Lab Techniques (4 cr)  
**PlSc 476**  
Cell Biology (3 cr)  
**PlSc 488**  
Genetic Engineering (3 cr)  
**REM 341**  
Systematic Botany (3 cr)  
**WLF 440**  
Conservation Biology (3 cr)  
**WLF 448**  
Fish and Wildlife Population Ecology (4 cr)  
**WLF 482**  
Ornithology (4 cr)  

### Natural History
- **Biol 478**  
Animal Behavior (3 cr)  
- **Biol 481**  
Ichthyology (4 cr)  
- **Biol 483**  
Mammalogy (3 cr)  
- **Biol 489**  
Herpetology (4 cr)  
- **REM 341**  
Systematic Botany (3 cr)  
- **WLF 482**  
Ornithology (4 cr)  

### Anatomy/Physiology
- **Biol 324**  
Comparative Vertebrate Anatomy (4 cr)  
- **Biol 423**  
Comparative Vertebrate Physiology (3 cr)  
- **Biol 428**  
Microscopic Anatomy (4 cr)  
- **MMBB 460**  
Microbial Physiology (3 cr)  
- **PlSc 415**  
Plant Pathology (3 cr)  

### Quantitative/Integrative Biology
- **Biol 425**  
ST: Experimental Field Ecology (3 cr)  
- **Biol 448**  
Plant Animal Interactions (3 cr)  
- **Biol 456**  
Computer Skills for Biologists (3 cr)  
- **Ent 441**  
Insect Ecology (3 cr)  
- **Math 437**  
Mathematical Biology (3 cr)  
- **MMBB 425**  
Microbial Ecology (3 cr)  
- **WLF 440**  
Conservation Biology (3 cr)  
- **WLF 448**  
Fish and Wildlife Population Ecology (4 cr)  

### Molecular/Cellular/Developmental (MCD) Biology
- **Biol 444**  
Genomics (3 cr)  
- **Biol 461**  
Neurobiology (3 cr)  
- **Biol 474**  
Principles of Developmental Biology (3 cr)  
- **Chem 414**  
Applications of Nanomaterials in Biomolecular Engineering (3 cr)  
- **MMBB 409**  
Immunology (3 cr)  
- **MMBB 440**  
Advanced Lab Techniques (4 cr)  
- **MMBB 475**  
Cell Biology (3 cr)  
- **MMBB 488**  
Genetic Engineering (3 cr)  

In addition to the above electives, Biology majors are encouraged to enroll in at least 3 credits of coursework that emphasizes social, political or philosophical aspects of biology. A list of suggested courses will be provided by the student’s advisor and is available on the department’s website.

**Biology B.A. students must also complete:**

6 credits (two courses) in the humanities in addition to the minimum university-wide general education requirement of 14 credits in the humanities/social sciences*  
3 credits (one course) in the social sciences in addition to the minimum university-wide general education requirement of 14 credits in the
Foreign Languages 0-16 credits (zero-four courses) competence in one foreign language equivalent to that gained by the completion of four semesters of college courses through the intermediate level. This requirement may be satisfied by the completion of either of the following options (1) 16 credits or four high-school units in one foreign language, or (2) 12 credits in one foreign language, and one three-credit course in literature translated from the same language. The 12 credits may be satisfied by three high-school units in one foreign language.

*Courses satisfying the humanities requirement are those dealing with the arts, literature, and philosophy. Courses satisfying the social science requirement are those courses dealing with a person’s social condition including social relations, institutions, history, and participation in an organized community. Refer to online degree audit system through Web registration system or your academic advisor for a listing of appropriate courses.

**Biology B.S. students must also complete:**

3 credits (one course) in the humanities in addition to the minimum university-wide general education requirement of 14 credits in the humanities/social sciences*

3 credits (one course) in the social sciences in addition to the minimum university-wide general education requirement of 14 credits in the humanities/social sciences*

A student may substitute for these requirements the successful completion of an academic minor or an area of emphasis of at least 18 credits approved by the Biological Sciences Department.

Courses to total 120 credits for this degree

Rationale: None Provided

6. Change the curricular requirements of **Microbiology** (B.S. Microbiol.):

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

- **Biol 101** Perspectives in Biology (1 cr)
- **Biol 114** Organisms & Environments (4 cr)
- **Biol 115** Cells and the Evolution of Life (4 cr)
- **Biol 250**, **Biol 255** General Microbiology and Lab (5 cr)
- **Biol 310**, **Biol 315** Genetics and Lab (4 cr)
- **Biol 312** Molecular and Cellular Biology (3 cr)
- **Biol 313** Molecular and Cellular Laboratory (1 cr)
- **Biol 380** Biochemistry (4 cr)
- **Biol 400** Seminar (1 cr)
- **Chem 111** Principles of Chemistry I (4 cr)
- **Chem 112** Principles of Chemistry II (5 cr)
- **Chem 253** Quantitative Analysis and Lab (5 cr)
- **Chem 254**
- **Chem 277** Organic Chemistry I (3 cr)
- **Chem 278** Organic Chemistry I: Lab (1 cr)
- **Chem 372** Organic Chemistry II (3 cr)
- **Gene 314** General Genetics (3 cr)
- **Math 170** Analytic Geometry and Calculus I (4 cr)
- **MMBB 154** Introductory Microbiology (3 cr)
- **MMBB 400** Seminar (1 cr)
- **Stat 251** Statistical Methods (3 cr)
- **One of the following (4 cr):**
  - **Biol 310**, **Biol 315** Genetics and Lab (4 cr)
  - **Biol 380** Biochemistry I (4 cr)
- **One of the following (4 cr):**
  - **Biol 401** Undergraduate Research (4 cr in one semester)
  - **PSC 440** Advanced Laboratory Techniques (4 cr)
- **One of the following Senior Experience Courses (2 cr):**
  - **Biol 401** Undergraduate Research (1-4 cr, max 8)
  - **Biol 405** Practicum in Anatomy Laboratory Teaching (2 cr)
  - **Biol 407** Practicum in Biology Laboratory Teaching (2 cr)
  - **Biol 408** Practicum in Human Physiology Laboratory Teaching (2 cr)
  - **Biol 411** Senior Capstone (2 cr)
- **One of the following (3 cr):**
  - **Engl 207** Persuasive Writing (3 cr)
  - **Engl 208** Personal and Exploratory Writing (3 cr)
Engl 317  Technical Writing (3 cr)

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):
- MMBB 401  Undergraduate Research (4 cr in one semester)
- MMBB 440  Advanced Laboratory Techniques (4 cr)

One of the following (4 cr):
- Phys 111, Phys 111L  General Physics I and Lab (4 cr)
- Phys 211, Phys 211L  Engineering Physics I and Lab (4 cr)

One of the following (4 cr):
- Phys 112, Phys 112L  General Physics II and Lab (4 cr)
- Phys 212, Phys 212L  Engineering Physics II and Lab (4 cr)

At least two 15 credits of the following microbiology electives (6 cr):
- Biol 432  Immunology (3 cr)
- Biol 433  Pathogenic Microbiology (3 cr)
- Biol 441  Cellular and Molecular Basis of Disease (3 cr)
- Biol 447  Virology (3 cr)
- Biol 462  Molecular Parasitology (3 cr)
- Biol 482  Protein Structure and Function (3 cr)
- Biol 485  Prokaryotic Molecular Biology (3 cr)
- Biol 487  Eukaryotic Molecular Genetics (3 cr)
- PiSc 476  Cell Biology (3 cr)
- PiSc 488  Genetic Engineering (3 cr)

At least two of the following molecular biology electives (5-6 cr):
- MMBB 422  Cellular and Molecular Basis of Disease (3 cr)
- MMBB 475  Cell Biology (3 cr)
- MMBB 485  Prokaryotic Molecular Biology (3 cr)
- MMBB 487  Eukaryotic Molecular Genetics (3 cr)
- MMBB 488  Genetic Engineering (3 cr)

Science Electives (6 cr)

Courses to total 120 credits for this degree

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

7. Change the curricular requirements of Molecular Biology and Biotechnology (B.S.M.B.B.):

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

- Biol 101  Perspectives in Biology (1 cr)
- Biol 114  Organisms & Environments (4 cr)
- Biol 115  Cells and the Evolution of Life (4 cr)
- Biol 250, Biol 255  General Microbiology and Lab (5 cr)
- Biol 310, Biol 315  Genetics and Lab (4 cr)
- Biol 312  Molecular and Cellular Biology (3 cr)
- Biol 313  Molecular and Cellular Laboratory (1 cr)
- Biol 380, Biol 382  Biochemistry I and Lab (6 cr)
- Biol 400  Seminar (1 cr)
- Biol 454  Biochemistry II (3 cr)
- Chem 111  Principles of Chemistry I (4 cr)
- Chem 112  Principles of Chemistry II (5 cr)
- Chem 253  Quantitative Analysis and Lab (5 cr)
- Chem 254
### General Curriculum Report

**Chem 277**  Organic Chemistry I (3 cr)
**Chem 278**  Organic Chemistry I: Lab (1 cr)
**Chem 372**  Organic Chemistry II (3 cr)
**Math 170**  Analytic Geometry and Calculus I (4 cr)
**MMBB 400**  Seminar (1 cr)
**MMBB 488**  Genetic Engineering (3 cr)
**Stat 251**  Statistical Methods (3 cr)

One of the following (3-4 cr):
- **Biol 310**: Genetics and Lab (4 cr)
- **Gene 314**: General Genetics (3 cr)

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 (3 cr):
- **MMBB 401**: Prokaryotic Molecular Biology (3 cr)
- **MMBB 487**: Eukaryotic Molecular Genetics (3 cr)

Select three of the following (8-10 cr):
- **Biol 432**: Immunology (3 cr)
- **Biol 433**: Pathogenic Microbiology (3 cr)
- **Biol 444**: Virology (3 cr)
- **Biol 447**: Virology (3 cr)
- **Biol 461**: Neurobiology (3 cr)
- **Biol 462**: Molecular Parasitology (3 cr)
- **Biol 474**: Principles of Developmental Biology (3 cr)
- **Biol 482**: Protein Structure and Function (3 cr)
- **Biol 485**: Prokaryotic Molecular Biology (3 cr)
- **Biol 487**: Eukaryotic Molecular Genetics (3 cr)
- **FS 520**: Instrumental Analysis (2 cr)
- **Pisc 476**: Cell Biology (3 cr)

One of the following (4 cr):
- **Biol 401**: Undergraduate Research (4 cr)
- **Pisc 440**: Advanced Laboratory Techniques (4 cr)
- **Biol 499**: Directed Study (4 cr)

One of the following Senior Experience Courses (2 cr):
- **Biol 401**: Undergraduate Research (1-4 cr, max 8)
- **Biol 405**: Practicum in Anatomy Laboratory Teaching (2 cr)
- **Biol 406**: Practicum in Biology Laboratory Teaching (2 cr)
- **Biol 408**: Practicum in Human Physiology Laboratory Teaching (2 cr)
- **Biol 411**: Senior Capstone (2 cr)

One of the following (3 cr):
- **Engl 207**: Persuasive Writing (3 cr)
- **Engl 208**: Personal and Exploratory Writing (3 cr)
- **Engl 317**: Technical Writing (3 cr)

One of the following (4 cr):
- **Phys 111**: General Physics I (4 cr)
- **Phys 111L**: General Physics I (4 cr)
- **Phys 211**: Engineering Physics I (4 cr)
- **Phys 211L**: Engineering Physics I (4 cr)

One of the following (4 cr):
- **Phys 112**: General Physics II (4 cr)
- **Phys 112L**: General Physics II (4 cr)

One of the following (4 cr):
- **Phys 212**: Engineering Physics II (4 cr)
- **Phys 212L**: Engineering Physics II (4 cr)

One of the following (4 cr):
- **MMBB 401**: Undergraduate Research (4 cr)
- **MMBB 440**: Advanced Laboratory Techniques (4 cr)
- **MMBB 499**: Directed Study (4 cr)

Select two of the following (5-6 cr):
- **Biol 444**: Genomics (3 cr)
- **MMBB 409**: Immunology (3 cr)
- **MMBB 413**: Pathogenic Microbiology (3 cr)
- **MMBB 422**: Cellular and Molecular Basis of Disease (3 cr)
- **MMBB 432**: Virology (3 cr)
- **MMBB 475**: Cell Biology (3 cr)
- **MMBB 485**: Prokaryotic Molecular Biology (3 cr)
MMBB 487  Eukaryotic Molecular Genetics (3 cr)

One of the following (3 cr):

Stat 251  Statistical Methods (3 cr)
Stat 301  Probability and Statistics (3 cr)

Courses to total 120 credits for this degree

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

Conservation Social Sciences

1. Add the following course:

   CSS 574  Environmental Politics and Policy (3 cr)
   Political and institutional context for the formulation, implementation, and evaluation of U.S. environmental policy.

   Recommended Short Course Title: Env Politics & Policy

Curriculum and Instruction

1. Change 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 MusT 383; or Permission

Electrical and Computer Engineering

1. Change the curricular requirements of Computer Engineering (M.Engr. & M.S.):

   The Computer Engineering Program offers both Master of Science and Master of Engineering degrees. Both degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of computer engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

   Qualifications for Admittance. Candidates must have a bachelor's degree in computer engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (iBT) version, 250 for the computer version, or 550 for the paper version. All candidates must submit scores from the general portion of the Graduate Record Examination.

   Candidates who do not have a bachelor's degree in computer engineering may be admitted to the graduate program if they meet the following minimum requirements. Candidates who do not have a bachelor’s degree in computer engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

   1. A bachelor's degree in electrical engineering, computer science, or another engineering discipline or in a science supporting area of study such as mathematics or physics.
   2. Demonstrated proficiency in the fundamentals of computer engineering emphasized in the undergraduate curriculum. Proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents: CS 240, ECE 240, ECE 310, ECE 340, ECE 350, ECE 440, Math 310, and Math 330 (does not count for graduate credit), Fundamentals of Electronics (ECE 310), Digital Logic (ECE 240), Computer Organization and Architecture (CS 150), Computer Science II (CS 121), Discrete Mathematics (Math 176), Differential Equations (Math 310), Linear Algebra (Math 330). Some deficiencies may be removed by taking background courses through Engineering Outreach. Students with undergraduate course deficiencies in the fundamentals of computer engineering must remove these deficiencies prior to admission for graduate work. Such deficiency courses cannot be used for graduate credit.
   3. Two advanced undergraduate courses in electrical engineering, computer engineering, or computer science equivalent to Computer Operating Systems, Digital Systems Engineering (ECE 440). Students with undergraduate course deficiencies in the advanced areas of computer engineering must remove these deficiencies either prior to admission or in the first three semesters of graduate work. Such deficiency courses cannot be used for graduate credit.

   Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

   Master of Science, Major in Computer Engineering. To be approved, programs must satisfy both the university requirements governing the M.S. degree and must be enrolled in ECE 591, Electrical Engineering Research Colloquium, during each semester of on-campus enrollment.

   Master of Engineering, Major in Computer Engineering. To be approved, programs must satisfy both the university requirements governing the M.S. degree and must be enrolled in ECE 591, Electrical Engineering Research Colloquium, during each semester of on-campus enrollment.
2. Change the curricular requirements of **Electrical Engineering** (M.Engr. & M.S.):

   The Electrical Engineering Program offers Master of Science, Master of Engineering, and Ph.D. degrees. The Master of Science and Master of Engineering degrees may be earned through the Engineering Outreach off campus program. These advanced degrees offer engineering students an opportunity to strengthen their knowledge of electrical engineering by taking graduate courses that focus on advanced subject matter and by participating in research.

   **Qualifications for Admittance.** Candidates must have a bachelor’s degree in electrical engineering, with an undergraduate GPA of 3.00 or higher. International students who are required to take the TOEFL examination by the College of Graduate Studies must have a TOEFL score of at least 79 for the Internet-based Test (IBT) version, or 550 for the paper-based version. All candidates must submit scores from the general portion of the Graduate Record Examination.

   Candidates who do not have a bachelor’s degree in electrical engineering may be admitted to the graduate program if they meet the following minimum requirements in addition to the Electrical and Computer Engineering department and College of Graduate Studies admissions requirements.

   1. A bachelor’s degree in computer engineering, computer science, or another engineering discipline or in science such as mathematics or physics.

   2. Demonstrated proficiency in the fundamentals of electrical engineering emphasized in the undergraduate curriculum. For each area of emphasis in electrical engineering, proficiency is demonstrated by successful completion of the following fundamental courses or their equivalents. Power Area: ECE 212, ECE 320, ECE 329, ECE 350, ECE 359, ECE 420 (does not count for graduate credit), Electromagnetics Area: Math 170, Math 175, Math 275, Math 310, Physics 212, ECE 212L, ECE 212, ECE 330, ECE 350, ECE 359, ENGR 210, ECE 432 (does not count for graduate credit), Microelectronics Area: ECE 212, ECE 310, ECE 319, ECE 350, ECE 359, ECE 410 (does not count for graduate credit), and Systems Area: ECE 350, ECE 359, Stat 301, Math 330.

   Students may petition the graduate committee for exceptions to the required background list if their advisor or interim advisor approves.

   **Master of Science, Major in Electrical Engineering.** General M.S. requirements apply, except that the department requires at least 24 credits of course work in addition to a thesis. The master’s program may provide advanced preparation for professional practice, or it may serve as the first step in graduate study leading to the Ph.D. degree. Specific courses to be taken for the program are not prescribed by the faculty. Students, with the assistance of their major professor, prepare their own program as soon as possible during their first semester, and submit it to the faculty for approval.

   1. At least 18 credits in electrical engineering courses numbered 500 or above.

   2. Two or more electrical engineering courses numbered above 500 in a given area for depth.

   3. At least one course in each of two areas (outside the areas selected under item 2) to provide breadth.

   4. Enrollment in ECE 591, Electrical Engineering Research Colloquium, during each semester of on-campus enrollment.

   **Master of Engineering, Major in Electrical Engineering.** General M.Engr. requirements apply, except that the department requires at least 30 credits of course work. Students, with the assistance of their major professor, prepare their own program as soon as possible during their first semester, and submit it to the faculty for approval. To be approved, programs must satisfy both the university requirements governing the M.Engr. degree and the following department requirements:

   1. At least 18 credits in electrical engineering courses numbered 500 or above.

   2. At least three electrical engineering courses in a given area for depth, two of which must be numbered 500 or above.

   3. At least one course in each of two areas (outside the areas selected under item 2) to provide breadth.

   4. Enrollment in ECE 591, Electrical Engineering Research Colloquium, during each semester of on-campus enrollment.

   **Doctor of Philosophy, Major in Electrical Engineering.** General Ph.D. requirements apply. The preliminary examination consists of both a written and an oral examination. There is no foreign language requirement. Two semesters of ECE 591, Electrical Engineering Research Colloquium, will be required for on-campus doctoral students.

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**English**

1. Add the following course:

   **Engl 318 Science Writing (3 cr)**
   
   Same as JAMM 328. Principles and practices of making scientific concepts and work accessible to general audiences through multiple forms of media; also examines the ways in which media coverage of scientific issues shapes public opinion and policy.

   **Prereq:** Engl 102 and sophomore Standing

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**Fish and Wildlife Sciences**

1. Add the following courses:

   **Fish 202 Fish & Wildlife Applications II (1 cr)**
   
   This two semester sequence (WLF201, Fish 202) of courses will introduce students to research questions and methods in fish and wildlife sciences, the culture and organization of potential state, federal and tribal employers and management challenges for fish and wildlife. The course will include an experiential learning field trip.

   **Prereq:** NR 101 or Permission
Recommended Short Course Title: None Provided. Editor recommends: Fish & Wildlife Applications II

**WLF 105 Hunter Education (2 cr)**
The course provides an overview of hunter ethics; wildlife management, conservation, and survival; and wildlife laws and law enforcement. This course also fulfills the state requirement for hunter education for purchase of a hunting license. Course includes in-class instruction and one outdoor field day. Graded Pass/Fail.

**WLF 201 Fish and Wildlife Applications I (1 cr)**
This two semester sequence (WLF201, Fish 202) of courses will introduce students to research questions and methods in fish and wildlife sciences, the culture and organization of potential state, federal and tribal employers, and management challenges for fish and wildlife populations and habitats. The course will include an experiential learning field trip.  
*Prereq: NR 101 or Permission*

Recommended Short Course Title: None Provided. Editor recommends: Fish & Wildlife Applications I

**WLF 205 Wildlife Law Enforcement (2 cr)**
This course will provide students with an introduction to the history of wildlife laws and the role of a Conservation Officer. It will also provide students with a better understanding of wildlife crimes and the impact they have on fish and wildlife. This course is designed for students seeking a career in wildlife law enforcement as well as those pursuing a career in wildlife/fisheries/habitat management.

2. **Change the curricular requirements of Fishery Resources (B.S.Fish.Res.):**

Students pursuing a B.S. degree in fishery resources (management or aquaculture emphasis) must have received a grade of C or better in each of the following four indicator courses to register for fish- and wildlife-prefixed upper-division courses and to graduate with a B.S.Fish.Res.: Biol 116 and 213, Stat 251, and For 221.

To graduate, students must achieve a grade of C or better in Biol 481, and each fish- and wildlife-prefixed upper-division course listed in the requirements for the B.S. degree in fishery resources.

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

**First and Second Years**

<table>
<thead>
<tr>
<th>CourseCode</th>
<th>CourseName</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 115</td>
<td>Cells and the Evolution of Life (4 cr)</td>
</tr>
<tr>
<td>Biol 116</td>
<td>Organisms &amp; Environments (4 cr)</td>
</tr>
<tr>
<td>Biol 213</td>
<td>Principles of Biological Structure and Function (4 cr)</td>
</tr>
<tr>
<td>Chem 101</td>
<td>Introduction to Chemistry I (4 cr)</td>
</tr>
<tr>
<td>Comm 101</td>
<td>Fundamentals of Public Speaking (2 cr)</td>
</tr>
<tr>
<td>Econ 202</td>
<td>Principles of Microeconomics (3 cr)</td>
</tr>
<tr>
<td>Fish 102</td>
<td>The Fish and Wildlife Professions (1 cr)</td>
</tr>
<tr>
<td>Fish 202</td>
<td>Fish &amp; Wildlife Applications II (1 cr)</td>
</tr>
<tr>
<td>For 235 or CSS 235</td>
<td>Society and Natural Resources (3 cr)</td>
</tr>
<tr>
<td>Math 160</td>
<td>Survey of Calculus (4 cr)</td>
</tr>
<tr>
<td>NR 101</td>
<td>Exploring Natural Resources (1 cr)</td>
</tr>
<tr>
<td>Stat 251</td>
<td>Statistical Methods (3 cr)</td>
</tr>
<tr>
<td>WLF 201</td>
<td>Fish and Wildlife Applications I (1 cr)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CourseCode</th>
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</tr>
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<tbody>
<tr>
<td>Chem 275</td>
<td>Carbon Compounds (3 cr)</td>
</tr>
<tr>
<td>Chem 277</td>
<td>Organic Chemistry (3 cr)</td>
</tr>
<tr>
<td>One of the following (3 cr):</td>
<td></td>
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<tr>
<td>For 221</td>
<td>Ecology (3 cr)</td>
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<tr>
<td>REM 221</td>
<td>Ecology (3 cr)</td>
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<tr>
<td>One of the following (4 cr):</td>
<td></td>
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<tr>
<td>Geol 101, Geol 101L</td>
<td>Physical Geology and Lab (4 cr)</td>
</tr>
<tr>
<td>Soil 205, Soil 206</td>
<td>The Soil Ecosystem and Lab (4 cr)</td>
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<tr>
<td>One of the following (4 cr):</td>
<td></td>
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<tr>
<td>Phys 100, Phys 100L</td>
<td>Fundamentals of Physics and Lab (4 cr)</td>
</tr>
<tr>
<td>Phys 111, Phys 111L</td>
<td>General Physics I and Lab (4 cr)</td>
</tr>
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</table>

**Third and Fourth Years**

<table>
<thead>
<tr>
<th>CourseCode</th>
<th>CourseName</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 250, Biol 255</td>
<td>General Microbiology and Lab (5 cr)</td>
</tr>
<tr>
<td>Biol 481</td>
<td>Ichthyology (4 cr)</td>
</tr>
<tr>
<td>CSS 383</td>
<td>Natural Resource and Ecosystem Service Economics (3 cr)</td>
</tr>
<tr>
<td>Fish 314</td>
<td>Fish Ecology (3 cr)</td>
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<tr>
<td>Fish 315</td>
<td>Fish Ecology Lab (1 cr)</td>
</tr>
<tr>
<td>Fish 316</td>
<td>Principles of Population Dynamics (2 cr)</td>
</tr>
<tr>
<td>Fish 415</td>
<td>Limnology (4 cr)</td>
</tr>
<tr>
<td>Fish 418</td>
<td>Fisheries Management (4 cr)</td>
</tr>
</tbody>
</table>
3. Change the curricular requirements of **Wildlife Resources** (B.S.Wildl.Res.):

Students pursuing a B.S. in wildlife resources must have received a grade of C or better in each of the following four indicator courses to register in fish- and wildlife-prefixed upper-division courses and to graduate with a B.S. in wildlife resources: Biol 116 and 213, Stat 251, and For 221.

To graduate, a student must receive a grade of C or better in each fish- and wildlife-prefixed upper-division course listed in the requirements for the B.S. in wildlife resources.

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

**First and Second Years**

<table>
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<tr>
<th>Course Code</th>
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<td>Biol 115</td>
<td>Cells and the Evolution of Life (4 cr)</td>
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<tr>
<td>Biol 116</td>
<td>Organisms &amp; Environments (4 cr)</td>
<td></td>
</tr>
<tr>
<td>Biol 213</td>
<td>Principles of Biological Structure and Function (4 cr)</td>
<td></td>
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<tr>
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<tr>
<td>Fish 202</td>
<td>Fish &amp; Wildlife Applications II (1 cr)</td>
<td></td>
</tr>
<tr>
<td>For 235</td>
<td>Society and Natural Resources (3 cr)</td>
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</tr>
<tr>
<td>CSS 235</td>
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<td>NR 101</td>
<td>Exploring Natural Resources (1 cr)</td>
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</tr>
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<td>Stat 251</td>
<td>Statistical Methods (3 cr)</td>
<td></td>
</tr>
<tr>
<td>WLF 102</td>
<td>The Fish and Wildlife Professions (1 cr)</td>
<td></td>
</tr>
<tr>
<td>WLF 201</td>
<td>Fish and Wildlife Applications I (1 cr)</td>
<td></td>
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</tbody>
</table>

**Third and Fourth Years**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish 495</td>
<td>Seminar (1 cr)</td>
<td></td>
</tr>
<tr>
<td>For 375</td>
<td>Introduction to Spatial Analysis for Natural Resource Management (3 cr)</td>
<td></td>
</tr>
<tr>
<td>WLF 448</td>
<td>Fish and Wildlife Population Ecology (4 cr)</td>
<td></td>
</tr>
<tr>
<td>WLF 314, 315</td>
<td>Fish and Wildlife I and Lab (4 cr)</td>
<td></td>
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<tr>
<td>WLF 316</td>
<td>Wildlife Ecology II (4 cr)</td>
<td></td>
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<tr>
<td>WLF 440</td>
<td>Conservation Biology (3 cr)</td>
<td></td>
</tr>
<tr>
<td>WLF 448</td>
<td>Fish and Wildlife Population Ecology (4 cr)</td>
<td></td>
</tr>
</tbody>
</table>

Courses to total 120 credits for this degree
WLF 492  Wildlife Management (4 cr)
WLF 495  Wildlife Seminar (1 cr)

One of the following (3-4 cr):
Biol 310, Biol 315  Genetics and Lab (4 cr)
Gene 314  General Genetics (3 cr)

One of the following (4 cr):
Phys 100, Phys 100L  Fundamentals of Physics and Lab (4 cr)
Phys 111, Phys 111L  General Physics I and Lab (4 cr)

One of the following (3 cr):
Comm 431  Applied Business and Professional Communication (3 cr)
Engl 208  Personal and Exploratory Writing (3 cr)
Engl 317  Technical Writing (3 cr)

Restricted electives, choose two courses from the following (must receive a grade of C or better):
Biol 481  Ichthyology (4 cr)
Biol 483  Mammalogy (3 cr)
Biol 489  Herpetology (4 cr)
WLF 482  Ornithology (4 cr)

Approved work experience in major field required

Courses to total 120 credits for this degree

Forest, Rangeland, and Fire Sciences

1. Drop the following courses:

For 540  Conservation Genetics (3 cr)
See WLF 540.

For 556  Phylogenetics Reading Group (1 cr, max arr)
Review recent articles in phylogenetics and systematics journals. Students choose, critically review, and discuss the articles to develop critical-thinking skills and confidence in their knowledge of the literature. Graded P/F.

2. Add the following courses:

For 210  Winter Harvesting (1 cr)
This is an introduction to chainsaw safety and operation, precision timber falling, and winter harvesting methods taught as an intermediate-level forestry field practicum during the final week of winter break. All day classes take place on the University of Idaho Experimental Forest. Safety instruction covers methods taught in state and federal land agencies and other popular faller safety programs.
Prereq: Instructor Permission

For 546  Science Synthesis and Communication (3 cr)
This course is an online course only. Critically review science literature and write both brief and in-depth syntheses to address applied questions in science and management. Learn best practices for summarizing and communicating science effectively. Discuss challenges for application of science in management. Examples will focus on wildland fire science and management.
Recommended Short Course Title: Science Synthesis and Comm

For 557  Advanced Fire Behavior (3 cr)
Credit may be earned in only one of the following: For 450 or For 557. This course is an online course only. Understand the processes that control fire behavior in forest and rangelands, including combustion, emissions and heat release, and related fire effects. Use theory and advanced knowledge with scientific literature and case studies to critically assess the assumptions and limitations of surface and crown fire models, including the varying influences of fuels, terrain, and environmental conditions.

For 587  Wildland Fire Policy (2 cr)
This course is an online course only. Relationships between fire science and management and the federal laws and regulations that affect fire management in wildland ecosystems; the politics of wildland fire; and the effects of wildland fire on wildland-urban interface (WUI) communities. Recommended preparation is an upper division course in natural resource, environmental policy, or FOR 584. (Fall only)

3. Change the following courses:

For 102  Introduction to Forest Management (1 cr)
Intro to forestry, current management issues, timber and non-timber resources, educational and professional opportunities. Includes regional field trips ranging in length from one afternoon to one weekend.
For 373–273 Forestry Sampling Methods (2 cr)
Principles and practice of natural resource inventory, forest sampling and data analysis techniques, LIDAR, forest growth, and quantitative decision support. Lab analysis examples and use of Excel and statistical packages are integrated into lectures. (Fall only)
Coreq: For 274 and Stat 251

For 454/554 Air Quality, Pollution, and Smoke Management (3 cr)
Assessment of the controls and drivers of emission processes and impacts on air quality from agricultural, prescribed, and wildfires, industry, and other natural sources. Overview of the combustion and emission process, how these emissions impact the 'quality of air', and what models exist to monitor the emission. Other topics to include: recent EPA and other guidelines for smoke management planning, attainment issues, atmospheric transport and deposition processes, collaborative process for implementing smoke management plans. Additional work required for graduate credit.
Prereq: For 326

Recommended Short Course Title: Air Quality, Pollution & Smoke

For 584 Natural Resource Policy Development (3 cr)
This course is an online course only. The development of natural resource policy with emphasis on the policy process at the federal level in the U.S.; the role of and interrelationships between staff, committees, agencies and elected officials; the relationship of science and scientists with policy and politicians in the development of natural resource policy, including preparation of testimony related to natural resource science and policy issues; implementation of policy within the natural resource agencies and judicial interpretation of major natural resource policies in the U.S.
Recommended Preparation: An upper-division course in natural resource and/or environmental policy (Spring only)
Prereq: Undergraduate course in natural resource policy or political science or Permission

REM 244–144 Wildland Fire Management (2 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.

4. Change the curricular requirements of Forest Resources (B.S.For.Res.):

Students pursuing a B.S. degree in forest resources must receive a grade of C or better in the following indicator courses to register for upper-division courses in forest resources and to graduate with a B.S.For.Res.: Math 143, Stat 251, For 221, and For 274. Students must also have a minimum cumulative grade-point average of 2.00 in forest resource (For) courses to qualify for the B.S. degree in forest resources.

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

- Biol 115  Cells and the Evolution of Life (4 cr)
- CSS 383  Natural Resource and Ecosystem Service Economics (3 cr)
- Econ 202  Principles of Microeconomics (3 cr)
- For 102  Introduction to Forest Management (1 cr)
- For 235 or CSS 235  Society and Natural Resources (3 cr)
- Ent 469  Introduction to Forest Insects (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 373  Forestry Sampling Methods (2 cr)
- For 375  Introduction to Spatial Analysis for Natural Resource Management (3 cr)
- For 424  Forest Dynamics and Management (4 cr)
- For 430  Forest Operations (3 cr)
- For 462  Watershed Science and Management (3 cr)
- For 430  Forest Operations (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 (1 cr)
- Soil 205, 206  The Soil Ecosystem and Lab (4 cr)
- Stat 251  Statistical Methods (3 cr)
- One of the following (4 cr):
  - Biol 116  Organisms and Environments (4 cr)
  - PIsSc 205  General Botany (4 cr)
- One of the following (4 cr):
  - Chem 101  Introduction to Chem I (4 cr)
  - Chem 111  Principles of Chem I (4 cr)
- One of the following (3 cr):
  - Engl 313  Business Writing (3 cr)
  - Engl 317  Technical Writing (3 cr)
- One of the following (3 cr):
For 221  Ecology (3 cr)
REM 221  Ecology (3 cr)

One of the following (4 cr):
Phys 100, Phys Fundamentals of Physics and Lab (4 cr)
100L
Phys 111, Phys General Physics I and Lab (4 cr)
111L

Restricted Electives (11 cr):
AgEc 477  Law, Ethics, and the Environment (3 cr)
Biol 213  Principles of Biological Structure and Function (4 cr)
Biol 421  Advanced Evolutionary Biology (3 cr)
CSS 486  Public Involvement in Natural Resource Management (3 cr)
CSS 490  Wilderness and Protected Area Management (3 cr)
Fish 314  Fish Ecology (3 cr)
Fish 415  Limnology (4 cr)
Fish 430  Riparian Ecology and Management (3 cr)
For 255  Nursery Irrigation and Fertilization (1 cr)
For 326  Fire Ecology and Management (3 cr)
For 427  Prescribed Burning Lab (3 cr)
For 431  Low Volume Forest Roads (2 cr)
For 436  Cable Systems (2 cr)
For 472 or REM Remote Sensing of the Environment (4 cr)
472
For 497  Senior Thesis (2-4 cr)
Geog 301  Meteorology (3 cr)
Geog 385  GIS Primer (3 cr)
Geol 111, Geol Physical Geology for Science Majors (4 cr)
111L
Math 160  Survey of Calculus (4 cr)**
Math 170  Analytic Geometry and Calculus I (4 cr)**
PoS 364 or Politics of the Environment (3 cr)
CSS 364
REM 407  GIS Applications in Fire Ecology and Management (2 cr)
REM 410  Principles of Vegetation Measurement and Assessment (2 cr)
REM 411  Ecological Monitoring and Analysis (2 cr)
REM 429  Landscape Ecology (3 cr)
REM 440  Wildland Restoration Ecology (2 cr)
REM 459  Rangeland Ecology (2 cr)
REM 460  Integrating GIS and Field Studies in Rangelands (2 cr)
RMat 321  Renewable Materials Anatomy and Properties (3 cr)
RMat 444  Primary Products Manufacturing (3 cr)
Soil 446  Soil Fertility (1-3 cr)
Soil 454  Soil Development and Classification (3 cr)
Stat 431  Statistical Analysis (3 cr)
WLF 314  Wildlife Ecology I (3 cr)
WLF 316  Wildlife Ecology II (3 cr)
WLF 440  Conservation Biology (3 cr)

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.

**Note: Either Math 160 or Math 170 may be used as a restricted elective, but not both.

Geography

1. Add the following courses:

**Geog 260 Introduction to Geopolitics (3 cr)**
The course introduces students to contemporary approaches to geopolitics through the exploration of key geographic concepts and the ideas of structure and agency. Topics include terrorism, nationalism, militarism, borders, and environmental geopolitics. Current events are discussed to exemplify the concepts.

**Geog 430 Climate Change Ecology (3 cr)**
Climate change impacts on ecosystems, plants, and animals; feedbacks to climate change; climate change mitigation related to ecosystems and species.
**Prereq: Biol 114 or EnvS 101 or Geog 100 or For 221 or REM 221 or Permission of Instructor**

**Geog 489 Capstone Preparation (1 cr)**
Planning and preparation for senior project to be carried out in subsequent semester. Students learn expectations for the senior project, plan their project, gather data and other resources and develop an agreement with their faculty mentor.
2. Change the following courses:

**Geog 240 J345/J545 Global Economic Geography (3 cr)**
An overview of major developments and contemporary debates in the economic geography literature; economic globalization, the spatial dimensions of resource use, agriculture, industry, and post-industry landscapes, economic aspects of land-use change, location theory and case studies. Additional projects required for graduate credit. Reciprocal relations between people and the earth environment within an economic framework; resource distribution, developmental alternatives, movement, processing and industrialization, local to global perspective, theories and case studies.

**Geog 440 The New Global Alternative Spatial Economy (3 cr)**
Course will explore alternative approaches to neoclassical economics and classical economic geography at the global and regional scale useful in economic geography. Steady state economy, New-Keynesianism, dependence and uneven development, the world-systems perspective, evolutionary economics and Marxist perspectives are presented. The course will explore the structures of globalization from convergence and labor migration to trade bloc formation and regional specialization. An understanding of the role of location in the creation and modification of global, national and regional economic landscapes will be emphasized. (Alt/rys) 
**Prereq:** Geog 345 or Geog 350 or Permission of Instructor

3. Change the curricular requirements of 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engl 313</td>
<td>Business Writing or</td>
</tr>
<tr>
<td>Engl 317</td>
<td>Technical Writing (3 cr)</td>
</tr>
<tr>
<td>Geog 100</td>
<td>Physical Geography and Lab (4 cr)</td>
</tr>
<tr>
<td>Geog 100L</td>
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</tr>
<tr>
<td>Geog 185</td>
<td>Human Geography (3 cr)</td>
</tr>
<tr>
<td>Geog 200</td>
<td>World Regional Geography (3 cr)</td>
</tr>
<tr>
<td>Geog 313</td>
<td>Global Climate Change (3 cr)</td>
</tr>
<tr>
<td>Geog 385</td>
<td>GIS Primer (3 cr)</td>
</tr>
<tr>
<td>Geog 390</td>
<td>Cartographic Design &amp; Geovisualization (3 cr)</td>
</tr>
<tr>
<td>Geog 493</td>
<td>Senior Capstone in Geography (3 cr)</td>
</tr>
<tr>
<td>Math 143</td>
<td>Pre-calculus Algebra and Analytic Geometry (3 cr)</td>
</tr>
<tr>
<td>Stat 251</td>
<td>Statistical Methods (3 cr)</td>
</tr>
<tr>
<td>One of the following (3 cr):</td>
<td></td>
</tr>
<tr>
<td>Engl 313</td>
<td>Business Writing (3 cr)</td>
</tr>
<tr>
<td>Engl 317</td>
<td>Technical Writing (3 cr)</td>
</tr>
<tr>
<td>One of the following (3-4 cr):</td>
<td></td>
</tr>
<tr>
<td>Math 143</td>
<td>Pre-calculus Algebra and Analytic Geometry (3 cr)</td>
</tr>
<tr>
<td>Math 160</td>
<td>Survey of Calculus (4 cr)</td>
</tr>
<tr>
<td>Math 170</td>
<td>Analytic Geometry and Calculus I (4 cr)</td>
</tr>
<tr>
<td>Math 175</td>
<td>Analytic Geometry and Calculus II (4 cr)</td>
</tr>
</tbody>
</table>

Students must also choose 3 credits from the following courses in human geography (3 cr):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geog 240</td>
<td>Economic Geography (3 cr)</td>
</tr>
<tr>
<td>Geog 330</td>
<td>Urban Geography (3 cr)</td>
</tr>
<tr>
<td>Geog 340</td>
<td>Business Location Decisions (3 cr)</td>
</tr>
<tr>
<td>Geog 350</td>
<td>Geography of Development (3-4 cr)</td>
</tr>
<tr>
<td>Geog 360</td>
<td>Population Dynamics and Distribution (3-4 cr)</td>
</tr>
<tr>
<td>Geog 365</td>
<td>Political Geography (3 cr)</td>
</tr>
<tr>
<td>Geog 409</td>
<td>Rural Development (3 cr)</td>
</tr>
<tr>
<td>Geog 420</td>
<td>Land, Resources, and Environment (3 cr)</td>
</tr>
<tr>
<td>Geog 440</td>
<td>The New Global Economy (3 cr)</td>
</tr>
</tbody>
</table>

Student must also choose 3 credits from the following courses in physical geography (3 cr):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geog 301</td>
<td>Meteorology (3 cr)</td>
</tr>
<tr>
<td>Geog 401</td>
<td>Climatology (3 cr)</td>
</tr>
<tr>
<td>Geog 410</td>
<td>Biogeography (3 cr)</td>
</tr>
<tr>
<td>Geog 430</td>
<td>Climate Change Ecology (3 cr)</td>
</tr>
<tr>
<td>Geog 432</td>
<td>Applied Meteorology and Climatology (3 cr)</td>
</tr>
<tr>
<td>REM 450</td>
<td>Global Environmental Change (3 cr)</td>
</tr>
</tbody>
</table>

Student must also choose 3 credits from the following courses in human-environment interactions (3 cr):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geog 364</td>
<td>Idaho and the Pacific Northwest (3 cr)</td>
</tr>
<tr>
<td>Geog 411</td>
<td>Natural Hazards and Society (3 cr)</td>
</tr>
<tr>
<td>Geog 420</td>
<td>Land, Resources, and Environment (3 cr)</td>
</tr>
<tr>
<td>Geog 435</td>
<td>Climate Change Mitigation (3 cr)</td>
</tr>
<tr>
<td>Geog 455</td>
<td>Societal Resilience and Adaptation to Climate Change (3 cr)</td>
</tr>
<tr>
<td>Geog 491</td>
<td>Field Techniques (3 cr)</td>
</tr>
</tbody>
</table>

6 additional credits in Geography courses, for a total minimum number of 36 credits in Geography

Courses to total 120 credits for this degree
Students interested in obtaining more depth in any of the departmental focus areas (Geographic Information Science (GIS), spatial analysis, physical science and the environment, regional/global development) are encouraged to discuss with their advisor recommended courses in Geography and other departments appropriate to those depth areas.

4. **Change the curricular requirements of Climate Change (Minor):**

   Geog 313  
   Choose **two** of the following courses (6-9 cr):
   - Geog 401  Climate Change (3 cr)
   - Geog 430  Climate Change Ecology (3 cr)
   - Geog 435  Climate Change Mitigation (3 cr)
   - Geog 455  Societal Resilience and Adaptation to Climate Change (3 cr)
   - Geog 493  Senior Capstone in Geography (3 cr)

   An additional six credits chosen from the following (6 cr):
   - AgEc 451  Applied Environmental and Natural Resource Economics (3 cr)
   - AgEc 477  Law, Ethics, and Environment (3 cr)
   - CSS 383  Natural Resource and Ecosystem Service Economics (3 cr)
   - Econ 385  Environmental Economics (3 cr)
   - EDCI 329  Elementary Science Education (3 cr)
   - EDCI 433  Secondary Science Methods (3 cr)
   - EnvS 101  Introduction to Environmental Science (3 cr)
   - EnvS 225  International Environmental Issues Seminar (3 cr)
   - EnvS 438  Western US Water Resource Policy and Environmental Equity (3 cr)
   - EnvS 483 or EnvS 583  Water and Energy Systems (3 cr)
   - EnvS 484  History of Energy (3 cr)
   - EnvS 485  Energy Efficiency and Conservation (3 cr)
   - For 221  Ecology (3 cr)
   - For 235  Society and Natural Resources (3 cr)
   - For 326  Fire Ecology and Management (3 cr)
   - For 330  Forest Soil and Canopy Processes (4 cr)
   - For 426  Global Fire Ecology and Management (3 cr)
   - For 462  Watershed Science and Management (3 cr)
   - Geog 100, 100L  Physical Geography and Lab (4 cr)
   - Geog 301  Meterology (3 cr)
   - Geog 345  Global Economic Geography (3 cr)
   - Geog 350  Geography of Development (3-4 cr)
   - Geog 410  Biogeography (3 cr)
   - Geog 411  Natural Hazards and Society (3 cr)
   - JAMM 341  Mass Media Ethics (3 cr)
   - JAMM 428  Environmental Journalism (3 cr)
   - REM 221  Ecology (3 cr)
   - REM 429  Landscape Ecology (3 cr)
   - Soil 205  The Soil Ecosystem (3 cr)

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

5. **Change the curricular requirements of Geography information Systems (UG Academic Certificate):**

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

   Geog 385  GIS Primer (3 cr)
   Geog 475  Intermediate GIS (3 cr)

   Electives (9 cr)
   - Geog 390  Cartographic Design & Geovisualization (3 cr)
   - Geog 407 or Geog 507  Spatial Analysis and Modeling (3 cr)
   - Geog 424 or Geog 524  Hydrologic Applications of GIS and Remote Sensing (3 cr)
   - Geog 483 or Geog 583  Remote Sensing/GIS Integration (3 cr)
   - Geog 486 or Geog 586  Transportation, GIS and Planning (3 cr)
Geog 479   GIS Programming (3 cr)
Geog 587   Advanced Topics in Remote Sensing (3 cr)

Courses to total 15 credits for this certificate

**Geological Sciences**

1. Change the following course:

   **Geol 423 Principles of Geochemistry (3 cr)**
   Physiochemical principles applied to geologic processes. Topics covered include atmospheric geochemistry, environmental geochemistry, aqueous geochemistry, crystal chemistry, radiogenic and stable isotopes. Two lec and one 2-hr lab a wk.
   
   **Prereq:** Geol 249

**History**

1. Drop the following courses:

   **Hist 425 Immigration and Ethnicity in the United States (3 cr)**
   Survey of the history of American immigration from the era of colonization to the present. Course will investigate the process of immigration and adaptation to life in the United States, as well as the reaction to immigrants by native-born Americans. Course will consider how immigrants fit within the larger framework of American identity and help define what it means to be "American." Recommended preparation: Hist 111 and Hist 112. (Alt/yrs)
   
   **Recommended Equivalent Course:** None

   **Hist 519 (s) Topics in the American West (3 cr)**
   See Hist J419/J519.
   
   **Recommended Equivalent Course:** None

   **Hist 521 Pirates of the Caribbean and Beyond (3 cr)**
   See Hist J421/J521.

   **Hist 523 Idaho and the Pacific Northwest (3 cr)**

   **Hist 528 History of the American West (3 cr)**
   See Hist J428/J528.

   **Hist 552 Europe in the Age of the Revolution, 1770-1880 (3 cr)**
   See Hist J452/J552.

2. Add the following courses:

   **Hist 340 Modern India, 1757-1947 (3 cr)**
   Examines three crucial centuries of the world’s largest democracy, focusing upon British rule, Indian reactions to imperialism, emergence of nationalism, science and technological advances, and socio-religious movements. Emphasis on what the categories of “tradition” and “modernity” have meant in the subcontinent and how these are associated with understandings of “knowledge,” “community,” “culture,” “caste,” and “science and technology.”

   **Hist 378 History of Science I: Antiquity to 1700 (3 cr)**
   Examines the changing nature of scientific thought, institutions, and technological advance from Western antiquity until 1700. Emphasis on the Scientific Revolution and the interrelations between science, culture, and society.

   **Recommended Short Course Title:** Hist Science Antiquity to 1700

   **Hist 379 History of Science II: 1700-Present (3 cr)**
   Examines the changing nature of scientific thought, institutions, and technological advance from 1700 to the present. Emphasis upon the rapid acceleration of scientific knowledge and practice in the global setting – particularly the physical sciences – as well as the strong interconnections between states, institutions, and broader sociocultural factors in the making of scientific knowledge.

   **Recommend Short Course Title:** Hist Science 1700 to Present
Hist 514 Colloquium in American History (3 cr)
Intense reading in the historical literature on American society, focusing upon questions of race, gender, class, and geographic region. Emphasis on changing approaches to historical problems, different schools of historical thought, methodological issues, and implementation in the classroom. Content will vary with instructor.
Prereq: Graduate Standing or Permission of the Instructor

Hist 522 Colloquium in European History (3 cr)
Intense reading in the historical literature on European society. Emphasis on changing approaches to historical problems, different schools of historical thought, methodological issues, and implementation in the classroom. Content will vary with instructor.
Prereq: Graduate Standing or Permission of the Instructor

3. Change the following courses:

Hist J411/J511 Colonial North America, 1492-1763 (3 cr)
Native American societies; Spanish, French, and English colonization; international rivalries. 1492-1763.

Hist J412/J512 Revolutionary North America and Early National Period, 1763-1828 (3 cr)
Era of the American War of Independence; Confederation; Early Nationhood, 1763-1828.

Hist 415 Civil War and Reconstruction, 1828-1877 Expanding America (3 cr)
Market revolution, territorial expansion, and rising sectionalism, including nineteenth-century wars: sectionalism, westward expansion, slavery, the Civil War and Reconstruction.

Hist J416/J516 Rise of Modern America, 1877-1919 (3 cr)
Industrial development, unchecked capitalism, political reform, populism, the progressive era, World War I, and the rise of celebrity culture (sports and Hollywood). Industrial and economic development, political reform, populism, the progressive era, and World War I. Additional work required for graduate credit.

Hist J417/J517 United States, 1919-1960 America in Crisis (3 cr)
The Depression, the New Deal, World War II, becoming a world power, the Cold War, and defining freedom and democracy for all. The Twenties, the Depression, the New Deal, World War II, becoming a world power, and the Cold War. Additional work required for graduate credit.

Hist J418/J518 Recent Contemporary America, 1960-Present (3 cr)
1960's the age of great dreams, 1970's disillusionment, Reaganism and a renewed American nationalism, and other topics. America since 1960. Additional work required for graduate credit.

Hist J419/J519 (s) Topics in the American West (3 cr)
Special Topics in the American West. Additional work required for graduate credit.

Hist J421/J521 Pirates of the Caribbean and Beyond (3 cr)
The course will use the study of pirates and privateers to examine two main questions. Firstly, the role of pirates in the construction and collapse of empires from the Roman period to the present day and secondly, the examination of the popular representations of piracy across a similar period. Additional work required for graduate credit.

Hist J423/J523 Idaho and the Pacific Northwest (3 cr)
Political, economic, social development; earliest times to the present.

Hist J428/J528 History of the American West (3 cr)
Survey of major developments in the American West, from the Great Plains to the Pacific Ocean and beyond, including racial and ethnic diversity, environment, gender, politics, and economics. Spanish beginnings, Anglo-French expansion, the American occupancy, 1540 to present.

Hist J452/J552 Europe in the Age of the Revolution, 1770-1880 (3 cr)
The social, political, and cultural dimensions of revolutions of 1789, 1830, 1848, and 1870; impact of industrial revolution upon daily life; process of European nation-building; new ideologies of liberalism, socialism, conservatism, and romanticism. Additional work required for graduate credit.

4. Change the curricular requirements of History (B.S.):

Note: Students expecting to study for an M.A. or Ph.D. degree in the humanities and social sciences history should take the B.A. rather than the B.S. degree.

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

Hist 290 The Historian's Craft (3 cr)
Lower-division courses selected from the following (9 cr):
Hist 101 History of Civilization (3 cr)
Hist 102 History of Civilization (3 cr)
Hist 111  Introduction to U.S. History (3 cr)
Hist 112  Introduction to U.S. History (3 cr)
Hist 180  Introduction to East Asian History (3 cr)
Hist 270  Introduction to Greek and Roman Civilization (3 cr)

Upper-division history courses, including a seminar in senior year (27 cr)
Related fields (20 cr)

Any combination of the following (12 cr):
Any foreign language (high-school foreign language may be substituted at the rate of 4 cr per year)

Courses selected from the University’s general education “diversity” or “international” requirements (in addition to university-wide general education requirements):

Engl 257  Literature of Western Civilization (3 cr)
Engl 258  Literature of Western Civilization (3 cr)
FLEN 313  Modern French Literature in Translation (3 cr)
FLEN 324  German Literature in Translation (3 cr)
FLEN 391  Hispanic Film (3 cr)
FLEN 393  Spanish Literature in Translation (3 cr)
FLEN 394  Latin American Literature in Translation (3 cr)

Courses to total 120 credits for this degree

Interdisciplinary Studies

1. Add the following course:

Intr 492  College of Science Ambassadors (1 cr, max 8)
Student ambassadors are selected through an application and interview process. Students will learn skills in leadership, communication, networking, and public speaking. Students will be responsible for representing the College of Science in various recruiting activities and events.

Prereq: Permission

Journalism and Mass Media

1. Add the following course:

JAMM 328  Science Writing (3 cr)
See as Engl 318.

2. Change the following course:

JAMM 477  Documentary Film (3 cr)
Same as Engl 477. An examination of the historical development of nonfiction film and television. Study of documentary style and form, a consideration of social issues raised by documentary and a survey of significant practitioners and theorists of documentary film and television. Recommended preparation: Engl 230.

Prereq: JAMM 100 with a grade of 'C' or better and JAMM 121 with a grade of 'C' or better Engl 102 and sophomore standing

Mathematics

1. Add the following subject prefix:

MthE – Mathematics Education

2. Add the following courses:

Math 427  Transformational Geometry (3 cr)
See MthE 527.

MthE 527  Transformational Geometry (3 cr)
Same as Math 427. Geometry concepts of congruence, parallelism, and similarity using rigid motions; the group structure of the collection of isometries and their matrix representations. For graduate credit, additional transformational approaches for calculus integration strategies are required. The course is of particular interest to secondary mathematics teaching majors.

Prereq: Math 330 or equivalent

3. Change the following courses:

Math MthE 235  Mathematics for Elementary Teachers I (3 cr)
Mathematical development of arithmetic and problem solving as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk.

Prereq: Math 137 or Math 143 or sufficient score on SAT, ACT, or COMPASS Math Test.
Math MthE 236 Mathematics for Elementary Teachers II (3 cr)
Mathematical development of informal geometry, problem solving, and probability and statistics as those subjects are currently taught in elementary schools. Three lec and one 1-hr lab a wk.
Prereq: Math 235

Math MthE 301 Early Childhood Mathematics (4 cr)
Focus on the mathematics for early childhood: numbers and operations, algebraic thinking, geometry, measurement, probability and statistics. Emphasis will be placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300 – level mathematics course in any major or minor in the College of Science. Recommended preparation: Stat 150. (Fall Only)
Prereq: One general education math course

Math MthE 303 Early Childhood Math I (2 cr)
Focus on the mathematics of early childhood: numbers and operations. Emphasis is placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300-level mathematics course in any major or minor in the College of Science. Recommended preparation: general education math course.

Math MthE 304 Early Childhood Math II (2 cr)
Focus on the mathematics of early childhood: algebraic reasoning, geometry, measurement, probability and statistics. Emphasis is placed on reasoning, representation, connections and communication. This course is restricted to students from either the School of Family and Consumer Sciences or the College of Education. This course will not count as a 300-level mathematics course in any major or minor in the College of Science. Recommended preparation: general education math cores.

Math 388 History of Mathematics (3 cr)
Same as Hist 388. History of the development of mathematical ideas from ancient cultures to the present, including the relationship of those ideas to the cultures that produced them as well as an understanding of the mathematics involved. Cooperative: open to WSU degree-seeking students.
Prereq: Math 175 and 430; or Permission

Math J453/J538 Stochastic Models (3 cr)
Same as Stat J453/J544. Markov chains, stochastic processes, and other stochastic models; applications. Additional projects/assignments reqd for grad cr. Cooperative: open to WSU degree-seeking students. (Spring, Alt/yrs)
Prereq: Math 451 or Permission

Math MthE 513 Problem Solving Through History (3 cr)
Historical study of approaches to solving problems in geometry, number theory, and set theory. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math MthE 514 Foundations of Calculus (3 cr)
Real numbers, sequences, topology of the real numbers, continuous functions, differentiation, and integration; emphasis on developing the conceptual understanding needed to teach calculus in secondary school. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math MthE 515 Problems in Geometry (3 cr)
Exploration of topics in geometry with emphasis on developing geometric reasoning and problem solving. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math MthE 516 Groups and Symmetry (3 cr)
Exploration of groups, symmetry, and permutations. This course is specifically designed for the MAT program, and will not satisfy the requirements of other mathematics degree programs.

Math MthE 590 Seminar in Math Education (1-3 cr, max arr)
Topics in Mathematics Education. May be repeated for credit. Cooperative: open to WSU degree-seeking students.

4. Change the curricular requirements of Mathematics (M.S.):

Master of Science, Major in Mathematics. General M.S. requirements apply. An undergraduate major in mathematics or its equivalent is a prerequisite. There is both a thesis and a non-thesis option. Both options have the same credit requirements. Of the minimum of 30 credits required for this degree, at least 18 credits must be in mathematics at the 500 level (excluding Math 500, Math 510-Math 519, Math 599, seminars, and directed study); the remaining 12 credits may include 400 and 500 level courses in mathematics, and 300 or 400 level courses in supporting areas. Mathematics Education (MEd) credits may not be counted. For the non-thesis option, a thesis is not required, but a three-hour comprehensive written examination covering 6 mathematics courses chosen by the student (with at least 5 at the 500 level) is required. For the thesis option, the student writes a thesis (which may be expository in nature) under the guidance of a thesis committee. A final examination in the form of an oral defense of the thesis is required.
Military Science

1. Drop the following courses:

   **MS 111  Leadership Lab (1 cr)**
   Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Challenging outdoor activities such as mountaineering, rifle marksmanship, and land navigation skills. Two hours of lab every other week. Uniforms are furnished and wear is required during lab. By permission only, for those with an interest in pursuing an Army commission.
   **Coreq:** Concurrent registration in MS 101
   Recommended Equivalent Course: None

   **MS 112  Leadership Lab (1 cr)**
   Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Challenging outdoor activities such as mountaineering, rifle marksmanship, and land navigation skills. Two hours of lab every other week. Uniforms are furnished and wear is required during lab. By permission only, for those with an interest in pursuing an Army commission.
   **Coreq:** Concurrent registration in MS 102
   Recommended Equivalent Course: None

   **MS 151  Physical Fitness Training (1 cr)**
   Physical fitness training focused on Army Standards for instruction and testing. Open to all UI students. (Fall only)
   Recommended Equivalent Course: None

   **MS 152  Physical Fitness Training (1 cr)**
   Physical fitness training focused on Army Standards for instruction and testing. Open to all UI students. (Spring only)
   Recommended Equivalent Course: None

   **MS 211  Leadership Lab (1 cr)**
   Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Practical field training in variety of outdoor skills. Uniforms are furnished and wear is required during lab. Two hrs of lab every other week. By permission only, for those with a potential interest in pursuing an Army commission.
   **Coreq:** Concurrent registration MS 201
   Recommended Equivalent Course: None

   **MS 212  Leadership Lab (1 cr)**
   Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Practical field training in variety of outdoor skills. Uniforms are furnished and wear is required during lab. Two hours of lab every other week. By permission only, for those with a potential interest in pursuing an Army commission.
   **Coreq:** Concurrent registration MS 202
   Recommended Equivalent Course: None

   **MS 251  Physical Fitness Training (1 cr)**
   Physical fitness training focused on Army Standards for instruction and testing. (Fall only)
   Recommended Equivalent Course: None

   **MS 252  Physical Fitness Training (1 cr)**
   Physical fitness training focused on Army Standards for instruction and testing. (Spring only)
   Recommended Equivalent Course: None

   **MS 311  Leadership Lab (1 cr)**
   Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other week.
   **Coreq:** MS 301
   Recommended Equivalent Course: None

   **MS 312  Leadership Lab (1 cr)**
   Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other week.
   **Coreq:** MS 302
   Recommended Equivalent Course: None
MS 351  Physical Fitness Training (1 cr)  
Physical fitness training focused on Army Standards for instruction and testing. (Fall only)  
**Coreq:** MS 301  
Recommended Equivalent Course: None

MS 352  Physical Fitness Training (1 cr)  
Physical fitness training focused on Army Standards for instruction and testing. (Spring only)  
**Coreq:** MS 302  
Recommended Equivalent Course: None

MS 411  Leadership Lab (1 cr)  
Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other week.  
**Coreq:** MS 401  
Recommended Equivalent Course: None

MS 412  Leadership Lab (1 cr)  
Building fundamental characteristics of leadership using a military model; hands-on training in small group leadership. Two hrs of lab every other week.  
**Coreq:** MS 402  
Recommended Equivalent Course: None

MS 451  Physical Fitness Training (1 cr)  
Physical fitness training focused on Army Standards for instruction and testing. (Fall only)  
**Coreq:** MS 401  
Recommended Equivalent Course: None

MS 452  Physical Fitness Training (1 cr)  
Physical fitness training focused on Army Standards for instruction and testing. (Spring only)  
**Coreq:** MS 402  
Recommended Equivalent Course: None

MS 489  Leadership Development Assessment Course (cr arr)  
Intensive and broad-ranging leadership training provided to cadets at Fort Lewis over a four week period during the summer. Cadets are assessed on their ability to lead units ranging from 11-135 persons, to master a variety of physical and mental challenges, and to exhibit composure and leadership skills in stressful situations.  
**Prereq:** MS 301, MS 302 and Permission  
Recommended Equivalent Course: None

2. Change the following courses:

**MS 101  Introduction to Military Science Intro to the Army & Critical Thinking (1 cr)**  
Introduces Cadets to the personal challenges and competencies that are critical for effective leadership. Cadets learn how the personal development of life skills such as critical thinking, goal setting, time management, stress management, and comprehensive fitness relate to leadership, officership, and the Army profession. Labs include leader's reaction/ropes course, basic survival skills, drill and ceremony, and emergency preparedness. One lecture hour and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets. Introduction to mission and organization of the U.S. Army provides background in role of an Army officer as a career choice in either the Active Army or the National Guard/Reserves; lecture, conference, and activities dealing with military subjects; texts provided by dept; no mandatory uniform wear; students also learn about available two- and three-year scholarships and other financial programs for which they may be eligible. Participation entails no military obligation.  
Recommended Short Course Title: None provided. Editor suggests: Intro to Army & Crit Thinking

**MS 102  Fundamentals of Leadership and Management Intro to the Profession of Arms (1 cr)**  
Overviews basic leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Cadets explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises. Labs include orienteering, a teambuilding exercise, first aid, cultural protection, and ethics problem solving. One lecture hour and one leadership lab hour; lab is optional – but highly encouraged – for noncontracted cadets. Continuation of MS 101. Development of greater understanding of roles and responsibilities of Army officers; lecture, conference, and activities dealing with military subjects; texts provided by dept; more focus on leadership development and the development of personal confidence. Participation entails no military obligation.  
Recommended Short Course Title: None provided. Editor suggests: Intro to Profession of Arms
MS 201. Applied Leadership and Management Foundations of Leadership I (2 cr)
Develops leadership skills and introduces different leadership theories. Further personal development such as time management and effective communication and briefing skills. Cadets explore tactics and techniques such as troop leading procedures, tactical movement, problem solving, and land navigation. Labs deepen understanding of the leader’s reaction/ropes course, basic survival skills, drill and ceremony, and emergency preparedness. Two lecture hours and one leadership lab hour; lab is optional - but highly encouraged - for noncontracted cadets. Application of leadership and management skills to various case studies; organization and structure of Army units; basic first aid; texts provided by department. Participation entails no military obligation.
Prereq: MS 102 or Permission

MS 202. Applied Leadership and Management Foundations of Leadership II (2 cr)
Examines the challenges of leading teams in the complex operational environment. The course highlights dimensions of terrain analysis, patrolling, and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. Prepares Cadets for third year MS classes. Cadets develop greater self awareness as they assess their own leadership styles and practice communication and team building skills. Case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. Labs deepen understanding of orienteering, teambuilding exercise, first aid, cultural protection, and ethics problem solving. Two lecture hours and one leadership lab hour; lab is optional - but highly encouraged - for noncontracted cadets. Troop leading procedures and application of procedures to planning and conducting small unit operations; individual soldier skills, such as military communication, basic map reading, and survival skills; texts provided by department. Participation entails no military obligation.
Prereq: MS 201 or Permission

MS 301. Advanced Leadership and Management Adaptive Team Leadership (3 cr)
Challenges cadets to study, practice, and evaluate adaptive leadership skills as they are presented with challenging scenarios related to squad tactical operations. Cadets receive systematic and specific feedback on their leadership attributes and actions. Based on such feedback, as well as their own self-evaluations, cadets continue to develop their leadership and critical thinking abilities. The focus is on developing the cadets’ tactical leadership abilities to enable them to succeed at ROTC’s summer Cadet Leader Course (CLC). Cadets help lead joint labs with the first two MS levels. Three lecture hours and one leadership lab hour. Practical leadership skills in a light infantry environment; leadership techniques practiced while learning patrolling and offensive and defensive tactics at squad and platoon level; prepares cadets for four-week Leadership Training and Assessment course at Fort Lewis. Three lecture hours and one leadership lab hour.
Prereq: MS 201 or Permission. Permission may be granted to students who have attended Leadership Training Camp or Basic Training from any U.S. military branch of service
Coreq: MS 311

MS 302. Advanced Leadership and Management Applied Team Leadership (3 cr)
Uses increasingly intense situations applying team leadership challenges to build cadet awareness and skills in leadership tactical operations at the small unit level. Cadets review aspects of full spectrum operations. They also conduct military briefings and develop proficiency in the operation orders process. The focus is on exploring, evaluating and developing skills in decision-making, persuading, and motivating team members in the contemporary operating environment. Cadets develop joint labs with the first two MS levels. Three lecture hours and one leadership lab hour. Practical leadership skills in a light infantry environment; leadership techniques practiced while learning patrolling and offensive and defensive tactics at squad and platoon level; prepares cadets for four-week Leadership Training and Assessment course at Fort Lewis. Three lecture hours and one leadership lab hour.
Prereq: MS 301 or Permission. Permission may be granted to students who have attended Leadership Training Camp or Basic Training from any U.S. military branch of service
Coreq: MS 312

MS 401. Seminar in Leadership and Management Mission Command and the Army Profession (3 cr)
Explores the dynamics of leading in complex situations of current military operations. Cadets examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Cadets also explore aspects of interacting with non-government organizations, civilians on the battlefield, the decision-making processes and host nation support. The course places significant emphasis on preparing Cadets for BOLC B and their first unit of assignment. It uses mission command case studies and scenarios to prepare you to face the complex ethical demands of serving as a commissioned officer in the United States Army. Three lecture hours and one leadership lab hour. Practical application of leadership and management skills; military justice system; administrative and logistical procedures; preparation for service as an Army lieutenant.
Prereq: MS 301-302
Coreq: MS 411

Recommended Short Course Title: None provided. Editor suggests: Mission Command and Army Prof

MS 402. Seminar in Leadership and Management Mission Command and the Company Grade Officer (3 cr)
Explores the dynamics of leading in complex situations during Unified Land Operations. It examines the Art of Command and how to properly communicate with your NCOs and Soldiers. During Cultural Awareness and Cultural Property Protection (CPP), they will discuss numerous situations on how ethical decisions impact personnel and the unit mission. Through understanding of their roles and responsibilities, they will learn about Comprehensive Soldier Fitness (CSF), Being Ready and Resilient (R2C), and Individual and Family Readiness can assist them in preparing their Soldiers and their Families on reducing and managing stress during times of uncertainty. The course places significant emphasis on preparing Cadets for BOLC B and their first unit of assignment. It uses mission command case studies and scenarios to prepare them to face the complex ethical demands of serving as a commissioned officer in the United States Army. Three lecture hours and one leadership lab hour. Practical application of leadership and management skills; military justice system; administrative and logistical procedures; preparation for service as an Army lieutenant.
Prereq: MS 301-302
Coreq: MS 412

Recommended Short Course Title: None provided. Editor suggests: Mission Cmd & Comp Grd Officer
3. Change the curricular requirements of **Military Science** (Minor):

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS 301</td>
<td>Adaptive Team Leadership (3 cr)</td>
</tr>
<tr>
<td>MS 302</td>
<td>Advanced Leadership and Management (3 cr)</td>
</tr>
<tr>
<td>MS 311</td>
<td>Leadership Lab (1 cr)</td>
</tr>
<tr>
<td>MS 312</td>
<td>Leadership Lab (1 cr)</td>
</tr>
<tr>
<td>MS 401</td>
<td>Mission Command and the Army Profession (3 cr)</td>
</tr>
<tr>
<td>MS 402</td>
<td>Mission Command and the Company Grade Officer</td>
</tr>
<tr>
<td>MS 411</td>
<td>Seminar in Leadership and Management (3 cr)</td>
</tr>
<tr>
<td>MS 412</td>
<td>Leadership Lab (1 cr)</td>
</tr>
</tbody>
</table>

Three credits of Military Science courses (3 cr)

Military History Course (3 cr) (Selected in consultation with the Professor of Military Science, this course should develop the student’s awareness of the relationship of the military establishment to society, particularly in the United States, and develop their interest in the evolution of war and the progression of military professionalism.)

Courses to total 18 credits for this minor

### Modern Languages and Cultures

1. Add the following course:

   **FL 401 MLC International Experience (1 cr)**

   This course is designed to align with the international experience component required of every French, Spanish, and Modern Language Business major within the Department of Modern Languages and Cultures. An international experience includes an 8-to-15 week pre-approved event. Each student participating in the international experience will be required to complete a final project that will showcase their cultural awareness through analytical and critical processes. In addition, every student participating in this course will be required to take the STAMP (STAndards-based Measurement of Proficiency) exam to evaluate communicative proficiency.

2. Change the curricular requirements of **French** (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 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 **33-36** 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 of these required upper-division courses in the Fren must be completed on campus
     - A maximum of 9 FLEN credits out of the total 33-36 may be applied towards the major, the remaining credits must be in Fren.
     - A second foreign language (elem & interm or equivalent) (16 cr)*
   
   *Note: 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.

   Courses to total 120 credits for this degree

3. Change the curricular requirements of **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 **33-36** 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 of these required upper-division courses in Span must be completed on campus
     - A maximum of 9 FLEN credits out of the total 33-36 may be applied towards the major, the remaining credits must be in Span.
     - A second foreign language (elem & interm or equivalent) (16 cr)*
   
   *Note: 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.

   Courses to total 120 credits for this degree

*Note: This requirement is waived for students with a double major (MLC French plus another major)
Courses to total 120 credits for this degree

**Natural Resources**

1. Add the following courses:

   **NR 520 Preparing Scientific Manuscripts (2 cr)**
   Details the preparation of manuscripts for thesis chapters and submission to peer-reviewed journals. Exercises include identifying scope, unique requirements for manuscript parts, use of graphing and reference database tools, editing and peer reviewing. Two 75 min classes per week, first half of semester. Second half of semester involves weekly writing workshops to finalize projects. Entry into class requires possession of analyzed dataset.
   **Prereq:** Permission

   Recommended Short Course Title: Preparing Science Manuscripts

   **NR 525 Scientific Graphics Design (3 cr)**
   Principles of graphics design for science, including the graphical presentation of data for printed and electronic journals, poster presentations, and oral presentations. Students will analyze published scientific graphics as well as learn to design their own graphs based on data from their graduate research or other sources.

2. Change the curricular requirements of **Natural Resource Conservation (B.S.Nat.Resc.Consv.):**

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

   CSS 235  
   Society and Natural Resources (3 cr)

   CSS 287  
   Foundations of Conservation Leadership and Management
   (taken simultaneously with NR 101) (3 cr)

   CSS 383  
   Natural Resource and Ecosystem Service Economics (3 cr)

   CSS 387  
   Environmental Communication Skills (3 cr)

   Econ 202  
   Principles of Microeconomics (3 cr)

   For 375  
   Introduction to Spatial Analysis for Natural Resource Management (3 cr)

   NR 101  
   Exploring Natural Resources (taken simultaneously with CSS 287) (1 cr)

   Stat 251  
   Statistical Methods (3 cr)

   One writing course, such as Engl 207, Engl 208, Engl 313, Engl 316, Engl 317 (3 cr)

   One of the following (3 cr):
   For 221  
   Ecology (3 cr)

   REM 221  
   Ecology (3 cr)

   One of the following (3-4 cr):
   Math 143  
   Pre-calculus Algebra and Analytic Geometry (3 cr)

   Math 160  
   Survey of Calculus (4r)

   Math 170  
   Analytic Geometry and Calculus I (4 cr)

   And one of the following emphases:

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

   CSS 304  
   Conservation Social Sciences Field Studies (3 cr)

   CSS 310  
   Social Research Methods in Conservation (4 cr)

   CSS 364  
   Politics of the Environment (3 cr)

   CSS 385  
   Conservation Management and Planning I (4 cr)

   CSS 475  
   Conservation Management and Planning II (4 cr)

   CSS 486  
   Public Involvement in Natural Resource Management (3 cr)

   CSS 489  
   Personalities and Philosophies in Conservation (3 cr)

   One of the following (4 cr):
   Biol 102, Biol 102L  
   Biology and Society and Lab (4 cr)

   Biol 115  
   Cells and the Evolution of Life (4 cr)

   One of the following (2-4 cr):
   Comm 101  
   Fundamentals of Public Speaking (2 cr)

   One semester of a foreign language course

   One of the following (3 cr):
   PolS 101  
   Intro 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 Chem I (4 cr)
Chem 111  Principles of Chem I (4 cr)
Geol 101, Geol 101L  Physical Geology and Lab (4 cr)

One of the following (3 cr):
For 326  Fire Ecology and Management (3 cr)
REM 440  Wildland Restoration Ecology (3 cr)
REM 459, REM 460  Rangeland Ecology (2 cr); and Integrating GIS and Field Studies in Rangelands (2 cr)
WLF 314  Wildlife Ecology I (3 cr)

Two of the following (6 cr):
CSS 490  Wilderness and Protected Area Management (3 cr)
CSS 493  International Land Preservation and Conservation Systems (3 cr)
LArc 480  The Emerging Landscape (3 cr)
WLF 440  Conservation Biology (3 cr)

Two of the following (6 cr):
Anth 100  Introduction to Anthropology (3 cr)
Psyc 101  Introduction to Psychology (3 cr)
Soc 101  Introduction to Sociology (3 cr)

12 credits (if not chosen above) from the following, in at least 2 disciplines with at least 2 courses in one discipline:
AgEc 477  Law, Ethics, and the Environment (3 cr)
Anth 428  Social and Political Organization (3 cr)
Bus 321  Marketing (3 cr)
Comm 410  Conflict Management (3 cr)
CSS 462  Natural Resource Policy (3 cr)
CSS 487  Environmental Education (3 cr)
CSS 490  Wilderness and Protected Area Management (3 cr)
CSS 492  Ecotourism Principles and Issues (3 cr)
CSS 493  International Land Preservation and Conservation Systems (3 cr)
CSS 496  Monitoring Impacts in Protected Areas and Wilderness (3 cr)
CSS 498  Internship (3-6 cr)
Geog 313  Global Climate Change (3 cr)
Geog 360  Population Dynamics and Distribution (3-4 cr)
Geog 455  Societal Resilience and Adaptation to Climate Change (3 cr)
Hist 423  Idaho and the Pacific Northwest (3 cr)
Hist 424  American Environmental History (3 cr)
JAMM 350  Public Relations Writing and Production (3 cr)
JAMM 444  Mass Media and Public Opinion (3 cr)
Phil 452  Environmental Philosophy (3 cr)
PolS 451  Public Administration (3 cr)
PolS 453  Public Management Techniques (3 cr)
PolS 454  Public Organization Theory (3 cr)
PolS 473  Sustainable Community Development Planning (3 cr)
PolS 480  Politics of Development (3 cr)
Psyc 320  Introduction to Social Psychology (3 cr)
Psyc 325  Cognitive Psychology (3 cr)
Soc 313  Collective Behavior (3 cr)
Soc 343  Political Sociology (3 cr)

Courses to total 120 credits for this degree

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

CSS 310  Social Research Methods in Conservation (4 cr)

One of the following (4 cr):
Biol 115  Cells and the Evolution of Life (4 cr)
Biol 116  Organisms and Environments (4 cr)

One of the following (4 cr):
Chem 101  Introduction to Chem I (4 cr)
Chem 111  Principles of Chem I (4 cr)

One of the following (4 cr):
CSS 364  Politics of the Environment (3 cr)
CSS 462  Natural Resource Policy (3 cr)

One of the following (4 cr):

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CSS 385  Conservation Management and Planning I (4 cr)
CSS 475  Conservation Management and Planning II (4 cr)
CSS 490  Wilderness and Protected Area Management (3 cr)

Natural Resource Science Restricted Electives (33 cr), at least 15 cr must be at the 400-level:

Fishery Science (6 cr):
Fish 314  Fish Ecology (3 cr)
Fish 315  Fish Ecology Lab (1 cr)
Fish 316  Principles of Population Dynamics (2 cr)
Fish 415  Limnology (4 cr)
Fish 418  Fisheries Management (4 cr)
Fish 422  Concepts in Aquaculture (3 cr)
Fish 424  Fish Health Management (4 cr)
Fish 430  Riparian Ecology and Management (3 cr)

Fire Ecology and Management (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 and Smoke Management (3 cr)

Forestry (6 cr):
For 320  Dendrology (4 cr)
For 324  Forest Regeneration (3 cr)
For 330  Forest Soil and Canopy Processes (4 cr)
For 373  Forestry Sampling Methods (2 cr)
For 424  Forest Dynamics and Management (4 cr)
For 425  Forest and Soil Nutrient Cycling (3 cr)
For 430  Forest Operations (3 cr)
For 431  Low Volume Forest Roads (2 cr)
For 436  Cable Systems (2 cr)
For 468  Watershed Science and Management (3 cr)
For 472  Remote Sensing of the Environment (4 cr)

Renewable Materials (6 cr):
RMat 321  Properties of Renewable Materials (3 cr)
RMat 365  Wood Building Technology (3 cr)
RMat 436  Biocomposites (3 cr)
RMat 438  Introduction to Lignocellulosic Chemistry (1 cr)
RMat 444  Primary Products Manufacturing (3 cr)
RMat 450  Biomaterials Deterioration and Protection (2 cr)
RMat 491  Biomaterial Product and Process Development Lab (2 cr)
RMat 495  Product Development and Brand Management (3 cr)

Rangeland Ecology and Management (6 cr):
REM 341  Systematic Botany (3 cr)
REM 410  Principles of Vegetation Measurement and Assessment (2 cr)
REM 411  Rangeland Ecology Current Topics and Field Studies (1 cr)
REM 440  Wildland Restoration Ecology (3 cr)
REM 452  Western Wildland Landscapes (2 cr)
REM 456  Integrated Rangeland Management (3 cr)
REM 459  Rangeland Ecology (2 cr)
REM 460  Integrating GIS and Field Studies in Rangelands (2 cr)
REM 472  Remote Sensing of the Environment (3-4 cr)

Wildlife Science (6 cr):
WLF 314  Wildlife Ecology I (3 cr)
WLF 315  Wildlife Ecology I Laboratory (1 cr)
WLF 316  Wildlife Ecology II (4 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
Physics

1. Drop the following courses:

   **Phys 301**  Junior Physics Lab (2 cr)
   Experimental techniques in modern physics, including optics, atomic, nuclear, and solid state physics; computer uses, error analysis, and
   scientific literature searches. One 1-hr lec and one 3-hr lab a wk. (Spring only)
   **Prereq:** Phys 213/213L or Permission
   Recommended Course Equivalent: None

   **Phys 412**  Physical Instrumentation II (3 cr)
   Methods and instruments used in experimental physics; electronic techniques; design problems in electronic measurement of physical
   quantities encountered in research. Two lec and one 3-hr lab a wk.
   **Prereq:** Phys 411
   Recommended Course Equivalent: None

2. Add the following courses:

   **Phys 407**  Communicating Science (1 cr)
   Writing scientific abstracts, manuscripts, and grant proposals; peer review; presenting concepts to scientists in oral and poster form;
   communicating to non-scientists.
   **Prereq:** Junior or Senior Standing

   **Phys J438/J538**  Biological Physics (3 cr)
   Physics principles applied to biological systems including organisms, cells, and biomolecules. Techniques for studying biological systems and
   phenomena. Additional projects/assignments required for graduate credit.
   **Prereq for Phys 438:** Phys 212 or Phys 213; and Junior or Senior Standing
   **Prereq for Phys 538:** Graduate Standing or Permission

   **Phys 492**  Senior Research (1 cr)
   Undergraduate research in one of the department focus areas. Scientific communication through one presentation to the scientific community
   and one written report.
   **Prereq:** Junior or Senior Standing; or Permission of Instructor

3. Change the following courses:

   **Phys 200**  (s)  Physics Seminar (1 cr, max 8)
   Introductory-level discussion of topics in modern physics; introduction to physics research topics and scientific information search techniques;
   written and/or oral reports of a pertinent topic in current physics. (Fall only)

   **Phys 211L**  Engineering Physics I Lab (1 cr)
   Kinematics and dynamics, Newton's laws, work and energy, rotational dynamics, linear and angular momentum, collisions, static equilibrium,
   oscillations, gravity and central forces. Three lec, one recitation, and one 2-hr lab a wk.
   **Prereq or Coreq:** Math 170, Phys 211

   **Phys 212L**  Engineering Physics II Lab (1 cr)
   Electric fields and potentials, magnetic fields, capacitance and inductance, DC and AC circuits, electromagnetic waves.
   **Prereq:** Phys 211/211L
   **Prereq or Coreq:** Math 175, Phys 212

   **Phys 213L**  Engineering Physics III Lab (1 cr)
   Fluid dynamics, waves in elastic media, sound waves, temperature, heat and thermodynamics, kinetic theory, geometric and physical optics.
   **Prereq:** Phys 211/211L
   **Prereq or Coreq:** Math 175, Phys 213

   **Phys 321**  Analytical Mechanics (3 cr)
   Review of single-particle kinematics and dynamics; linear oscillations; Lagrangian dynamics; orbital dynamics; motion in non-inertial systems;
   space rotation of rigid bodies. Kinematics and dynamics of particles; oscillating systems; dynamics of the rigid body.
   **Prereq:** Phys 212/212L and Math 275

   **Phys 322**  Analytical Mechanics (3 cr)
   Advanced topics in theoretical mechanics which may include: coupled linear oscillators; transition to a continuous system (vibrating string);
   Hamiltonian dynamics; non-linear dynamics. Principle of least action, dynamics of systems of particles, theory of oscillations, mechanics of continuous media.
   **Prereq:** Phys 321
Phys 341 Electromagnetic Fields I (3 cr)
This course is designed to provide undergraduate physics majors advanced instruction in electrostatics. The specific areas which will be covered are electric fields, electric potentials, work and energy in electrostatics, the technique of using the concept of image charges to solve for the electric field and electric potential of complex charge distributions, Laplace’s and Poisson’s equations, electric dipoles, polarization and polarizable materials, and the electric dipole approximation. Theory using vector calculus; electrostatics; magnetostatics; electromagnetism; analysis of AC and DC circuits; Maxwell’s equations; radiation and propagation of electromagnetic waves.
Prereq: Phys 212/212L and Math 275

Phys 342 Electromagnetic Fields II (3 cr)
This course is designed to provide undergraduate physics majors advanced instruction in electrodynamics and magnetism. The specific areas that will be covered are magnetostatics, magnetic fields in matter, the vector potential, electrodynamics, the complete set of Maxwell’s equations, electromagnetic waves, waveguides, electric and magnetic dipole radiation, retarded and advanced potentials, and radiation arising from accelerated charges and charge distributions. Theory using vector calculus; electrostatics; magnetostatics; electromagnetism; analysis of AC and DC circuits; Maxwell’s equations; radiation and propagation of electromagnetic waves.
Prereq: Phys 341

Phys 411 Physical Instrumentation I Advanced Physics Lab (3-4 cr)
Research skills, group dynamics, scientific literature research/drafting, automation and design techniques to prepare students for post-graduate life in a physics laboratory setting. 1-hr distributed lecture time and 3-hr effective lab time per week. Some weeks require scheduling machine utilization time outside of standard class hours per student. Methods and instruments used in experimental physics; electronic techniques; design problems in electronic measurement of physical quantities encountered in research. Two lec and one 3-hr lab a wk.
Prereq: Phys 305 or PermissionPhys 212/212L or Phys 213/213L, and Math 275

Phys J433-J533 Statistical Thermodynamics (3 cr)
Phys 433 Same as Chem 495. Classical thermodynamics, entropy, thermodynamic potentials, kinetic theory, classical and quantum statistical mechanics, ensembles, partition functions, introduction to phase transitions. Additional assignments required for graduate credit.
Prereq: Chem 306 or Phys 305 or equivalent

Phys 490 Research (1-6 cr, max 6)
Undergraduate research or thesis.
Prereq: Junior standing in physics and Permission of departmentPermission of Instructor

Phys 533 Statistical MechanicsThermodynamics (3 cr)
Ensembles, partition functions, classical and quantum statistics renormalization group, criticality, scaling, interacting systems, simulation.
Cooperative: open to WSU degree-seeking students. See Phys J433/J533.
Prereq: Phys 333

Phys 541 Electromagnetic Theory I (3 cr)
Analytical tools and techniques describing electromagnetic phenomena, particularly Maxwell’s equations, electrostatic and magnetostatic systems, including currents and their interactions and boundary value problems. Includes Maxwell's equations, electrostatics, magnetostatics, currents and their interactions, general theory of emission, propagation and absorption of electromagnetic waves, boundary value problems, relativistic formulation of electrodynamics. Cooperative: open to WSU degree-seeking students.
Prereq: Phys 322, Phys 342

Phys 542 Electromagnetic Theory II (3 cr)
Further examinations of the analytical tools and techniques that describe electromagnetic phenomena, particularly electrodynamics, the general theory of emission, propagation and absorption of electromagnetic waves, and the relativistic formulation of electrodynamics. Includes Maxwell's equations, electrostatics, magnetostatics, currents and their interactions, general theory of emission, propagation and absorption of electromagnetic waves, boundary value problems, relativistic formulation of electrodynamics. Cooperative: open to WSU degree-seeking students.
Prereq: Phys 322, Phys 342Phys 541

Phys 550 Quantum Mechanics I (3 cr)
Fundamental concepts, base sets and matrix representation, position and momentum space: Schroedinger and Heisenberg picture, Schroedinger’s wave equation and solutions: theory of angular momentum, Physical basis: Schroedinger wave formulation, Heisenberg matrix formulation, transformation theory, approximation methods, radiation theory, theory of scattering; application to atomic systems. Cooperative: open to WSU degree-seeking students.
Prereq: Phys 305, Phys 322Phys 351

Phys 551 Quantum Mechanics II (3 cr)
Theory of angular momentum continued; symmetries in quantum mechanics, approximation methods, time-dependent and time-independent perturbation theory, applications to atomic systems, radiation theory, theory of scattering, Physical basis: Schroedinger wave formulation, Heisenberg matrix formulation, transformation theory, approximation methods, radiation theory, theory of scattering, application to atomic systems. Cooperative: open to WSU degree-seeking students.
Prereq: Phys 305, Phys 322Phys 550
4. Change the curricular requirements of **Physics (B.S.)**:

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

- **Chem 111**  Principles of Chemistry I (4 cr)
- **Chem 112**  Principles of Chemistry II (5 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)
- **Phys 200**  Physics Seminar (1 cr)
- **Phys 211, Phys 211L**  Engineering Physics I and Lab (4 cr)
- **Phys 212, Phys 212L**  Engineering Physics II and Lab (4 cr)
- **Phys 213, Phys 213L**  Engineering Physics III and Lab (4 cr)
- **Phys 305**  Modern Physics (3 cr)
- **Phys 321**  Analytical Mechanics (3 cr)
- **Phys 341**  Electromagnetic Fields I (3 cr)
- **Phys 351**  Introductory Quantum Mechanics I (3 cr)

And one of the following emphases:

**A. General Physics Emphasis**

- **Phys 342**  Electromagnetic Fields II (3 cr)
- **Phys 371**  Mathematical Physics (3 cr)
- **Phys 433**  Statistical Thermodynamics (3 cr)

**Upper-division mathematics electives (6 cr)**

**Physics elective courses numbered 400 or above (15 cr including at least 4 cr of lab and 9 cr of non-lab courses)**

**Upper-division physics courses, including at least 4 cr of lab and 9 cr from the following: Phys 411, Phys 412, Phys 425, Phys 428, Phys 443, Phys 444, Phys 464, Phys 465, and Phys 484 (at least 15 cr).**

Courses to total 120 credits for this degree

**B. Applied Physics Emphasis**

- **Math 310**  Ordinary Differential Equations (3 cr)
- **Math 330**  Linear Algebra (3 cr)
- **Phys 411**  Advanced Physics Lab (4 cr), Physical Instrumentation I (3 cr)

Four credits of upper-division lab work in physics and engineering

Physics and engineering electives (27 credit, of which at least 21 credits must be upper-division and at least 9 credits must be 400-level and 21 credits must come from the following: ECE 350 + ECE 351, ECE 460, ECE 462, Engr 210, Engr 240, Engr 335, Engr 350, ME 301, ME 412, ME 413, ME 420, MSE 201, MSE 313, MSE 427, MSE 464, Phys 333, Phys 428, Phys 433, Phys 443, Phys 444, Phys 464, Phys 490, Phys 491.)

Courses to total 120 credits for this degree

5. Change the curricular requirements of **Physics (M.S.)**:

**Master of Science, Major in Physics (Thesis Option).** **Major in Physics**—General M.S. requirements for a degree with thesis apply. The student must complete a total of at least 30 credits at 400 level or higher, 20 of which must be at the graduate level, including a maximum of 10 credits in research and thesis. Specific departmental graduate course requirements are 2 credits in Phys 501 and Phys 521, Phys 541, Phys 542, and Phys 550. If a student's undergraduate preparation is considered deficient (e.g., if it lacks laboratory experience at the upper-division level), then certain undergraduate courses will be required in the study plan. Such remedial credits are not to be counted towards the total required for the degree. No departmental comprehensive exam is required.

A final defense of the M.S. thesis is scheduled upon completion of the thesis. **Full-time students have to take this examination no later than two years after passing the comprehensive examination.** The candidate is required to defend his or her work and show a satisfactory knowledge of the field in which the thesis research has been performed. The defense is oral and would typically last for one hour. The exam has to be announced to the physics faculty at least one week in advance. All members of the physics faculty are permitted to attend and ask questions. A recommendation of a majority of the student's graduate committee is necessary to pass the defense. If the defense is failed, it may be repeated only once; the repeat defense must be taken within a period of not less than three months nor more than one year following the first attempt.

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**Plant, Soil, and Entomological Sciences**

1. Change the following course:

**Soil 205 The Soil Ecosystem (3 cr)**

Introduction to the physical, chemical, and biological nature of soils.

**Prereq:** Chem 101 or **satisfy Prereq for Chem 111 or Instructor Permission**
Political Science

1. Add the following course:

**PolS 490 Senior Seminar (3 cr)**
Required of all political science majors; capstone course devoted to mastery of inquiry in political science research; topics will vary.
**Prereq:** Senior standing and 24 credits in political science

Sociology and Anthropology

1. Drop the following courses:

**Soc 250 Social Conflict (3 cr)**
Explores the origin, escalation, and resolution of social conflict. Focuses on major conflict theories, human values and social action, and the dynamics and regulation of social conflict within and between various kinds of social groupings.

Recommended Equivalent Course: Soc 337

**Soc 323 Political Economy (3 cr)**
This course discusses the history of political economic theories and links contemporary issues to classical and current sociological debates in the field. Recommended Preparation: Soc 230 or Soc 250.

Recommended Equivalent Course: Soc 341

**Soc 367 (s) Global Justice (3 cr, max arr)**
See Phil 367.

Recommended Equivalent Course: None

**Soc 401 Justice Policy Issues (3 cr)**
Focus on social, political, and economic factors that influence operation of the justice system and justice policy formation; critical issues such as the media and fear of crime to drugs and sentencing policy.
**Prereq:** Soc 101 and Senior standing and departmental major or minor or Permission

Recommended Equivalent Course: Soc 461

**Soc 440 Post-Colonialism (3 cr)**
This sociology course examines the history of development thought and its influence in post-colonial perspectives. Although generally conceived as a theory course in international development, this course will apply sociological tools for understanding the criticisms of modernization, neoliberalism, and early dependency theories. Taking the position of the "other", post-colonial theory broadens the scope of these aforementioned theories by drawing upon everyday social experience and the myriad social relations that complicate mainstream and mono-causal explanations of such things as uneven development, diversity, poverty, conflict, and environmental degradation. In learning what stirred the rise of post-colonial theories, students will learn how international development is understood from a variety of perspectives outside of the U.S.

Recommended Equivalent Course: Soc 460

2. Add the following courses:

**Soc 337 Violence and Society (3 cr)**
Explores the sources and types of violence, victims of violence, impact of firearms on violence, responses to violence by intergovernmental, national criminal justice systems, and non-state actors, and ways to reduce violence in society.
**Prereq:** Soc 101 or Instructor Permission

**Soc 338 Regulation of Vice (3 cr)**
This course explores the intersection of morality, law, and criminal justice through the examination of “vice” crime, such as illegal drug use, gambling, and sex work. The goal of the class is to explore the socially constructed nature of vice and examine the different socio-legal strategies that have been mobilized to control vice, such as criminalization, decriminalization, regulation, and harm reduction. The class will pay particular attention to the intended and unintended consequences that different social control schemes can have on the lives of racial and ethnic minorities, the poor, and urban communities.
**Prereq:** Soc 101 or Instructor Permission

**Soc 341 Science, Technology, and Society (3 cr)**
This course situates science and technology in the social context. The course draws from Sociology of Science and Science and Technology Studies to examine the nature of scientific expertise, processes of knowledge creation, interrelationship between science and technology, impacts of science and technology on society, and science policy. Students will develop the ability to ask important questions about how the human world affects science and technology – and how science and technology affects the human world

Recommended Short Course Title: ????
Soc 344 Urban Sociology (3 cr)
This course seeks to explore the city over time, examining in detail the economic, social, cultural, and political forces that shape the city and its character. It is an interdisciplinary course drawing not only from the fields of urban sociology and criminology, but also of literature, cultural studies, planning, and philosophy. In this course we will explore the following questions: What processes underlie urban growth patterns? What are the roles of political action, economic forces, and culture (i.e. ideology, consumption, and preferences) in shaping urban forms? How do these urban forms influence and shape the experiences of different social groups? How do processes related to increasing economic globalization create “global cities”? And how do these processes influence and help to create patterns of crime and urban inequality?
Prereq: Soc 101 or Instructor Permission

Soc 345 Extremism and American Society (3 cr)
This course explores sociological perspectives on extremism in American society. We will consider the socio-structural factors that contribute to a rise in extremist activism, that motivate people to join these organizations, and that provide political opportunity for organizational growth. The course will also explore the historical and contemporary circulation of extremist discourse and ideology in more mainstream spaces. Finally, the course will examine the impact these organizations have on broader society: culture, ideology, political discourse, etc. To accomplish this, the course will focus on case studies of past and current reactionary groups, including hate groups (KKK, neo-Nazi), militia and patriot groups (Posse Comitatus), terrorist groups, and other examples of extremism.
Prereq: Soc 101 or Instructor Permission

Soc 346 Responding to Risk (3 cr)
This course uses risk as a paradigm for a sociological analysis of agency and structure. Students are introduced to various theories and frameworks for modeling risk. The course investigates risk in individual and group behavior, decision making in situations of risk, and risk in the workings of social institutions and social practices, within the areas of crime and deviance, science and technology, health, and the environment.
Prereq: Soc 101 or Instructor Permission

Soc 411 Quantitative Social Science Methods (3 cr)
This course introduces students to social science research methods that collect quantitative data. It will discuss research design and ethics, data collection processes, and data analysis. Students recommended to take this course no later than their junior year.
Prereq: Soc 101 or Instructor Permission

Recommended Short Course Title: Quantitative Soc Sci Methods

Soc 413 Qualitative Social Science Methods (3 cr)
This course introduces students to different methods of collecting qualitative data. Qualitative methods include interviews, focus group interviews, participant observation, and ethnography. Students will learn qualitative research design and ethics, data collection processes, and strategies for data analysis. Students recommended to take this course no later than their junior year.
Prereq: Soc 101 or Instructor Permission

Recommended Short Course Title: Qualitative Soc Sci Methods

Soc 460 Capstone: Sociology in Action (3 cr)
Sociology in Action is designed to provide the resources and guidance necessary for sociology seniors to complete an independent or collaborative research project.
Prereq: Soc 101 and Senior Standing and Major in Department of Sociology and Anthropology; or Permission

Soc 461 Capstone: Justice Policy Issues (3 cr)
Justice Policy Issues is designed to provide the resources and guidance necessary for sociology seniors to complete an independent or collaborative policy-oriented research project.
Prereq: Soc 101 and Senior Standing and Major in Department of Sociology and Anthropology; or Permission

Soc 465 Environment, Policy, and Justice (3 cr)
The “environment” in modern times has been treated as something separate from human communities, yet our experiences and common understandings of progress and prosperity are integrally tied to our daily interactions with the environment. Environmental and human disasters in recent years have further reminded us of the importance of seeing our dependence on environmental health. This course surveys different perspectives surrounding environmental issues and society’s connection to them. Courses will slightly differ in emphasis depending on the instructor, allowing opportunities to explore more deeply how social philosophies, policies, and criminological dimensions can be linked to studying environment.
Prereq: Soc 101 or Instructor Permission

Recommended Short Course Title: ????

Soc 468 Capstone: Applied Sociology (3 cr)
This course offers sociology seniors the opportunity to pursue applied approaches to sociology. Opportunities include qualified internships or faculty directed projects.
Prereq: Soc 101 and Senior Standing and Major in Department of Sociology and Anthropology; or Permission
3. Change the following courses:

**Soc 343 Political Sociology** *Power, Politics, and Society* (3 cr)
Examines the relationship between political and social institutions, the distribution of power and authority in society, the origins and expansion of the modern state, social and cultural basis of political behavior, and characteristics of transnational and global governance. Recommended Preparation: Soc 230 or Soc 250.

*Prereq: Soc 101 or Instructor Permission*

**Soc 423 Social Class & Stratification** *Sociology of Prosperity: Social Class and Economics in the 21st Century* (3 cr)
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. Study of social inequality with a focus on the class structure of U.S. society; theories of stratification; consequences of social inequality.

*Prereq: Soc 101 and Soc 230 or Instructor Permission*

Recommended Short Course Title: Sociology of Prosperity

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**Statistical Sciences**

1. Change the status of the following courses from dormant to active:

**Stat J453/J544 Stochastic Models** (3 cr)
See Math J453/J538.

2. Add the following course:

**Stat 525 Master’s Econometrics** (3 cr)
Same as AgEc 525.

3. Change the following courses:

**Stat 251 Statistical Methods** (3 cr)
Credit not awarded for Stat 251 after Stat 301 or Stat 416, or for Stat 416 after Stat 251 or Stat 301. Credit awarded for only one of Stat 251, Stat 301, and Stat 416. Intro to statistical methods including design of statistical studies, basic sampling methods, descriptive statistics, probability and sampling distributions; inference in surveys and experiments, regression, and analysis of variance.

*Prereq: One of the following: Math 108, Math 137, Math 143, Math 160, Math 170, or Sufficient score on SAT, ACT, or COMPASS Math Test to qualify for registration in Math 130*

**Stat 301 Probability and Statistics** (3 cr)
Credit not awarded for Stat 251 after Stat 301 or Stat 416, or for Stat 416 after Stat 251 or Stat 301. Credit awarded for only one of Stat 251, Stat 301, and Stat 416. Intended for engineers, mathematicians, and physical scientists. Intro to sample spaces, random variables, statistical distributions, hypothesis testing, basic experimental design, regression, and correlation.

*Prereq: Math 175*

**Stat 416 Statistical Methods for Research** (3 cr)
Credit not awarded for Stat 251 after Stat 301 or Stat 416, or for Stat 416 after Stat 251 or Stat 301. Credit awarded for only one of Stat 251, Stat 301, and Stat 416. Concepts and methods in quantitative research including observational and experimental study design, point estimation, hypothesis testing, effect size, sample size, causation, one and two-way ANOVA, simple linear regression, interpreting and reporting results.

*Prereq: One of the following: Math 108, Math 137, Math 143, Math 160, Math 170, or Sufficient score on SAT, ACT, or COMPASS Math Test to qualify for registration in Math 130*

**Stat 422 Sample Survey Sampling Methods** (3 cr)
Introduction to survey sampling designs and inference including simple, stratified, and cluster sampling; ratio and regression estimators, unequal probability sampling, and population size estimation. Simple, random, systematic, stratified random, one and two stage cluster sampling; introduction to variable probability sampling and estimation of population size. Two hrs and one 1-hr lab a wk. Cooperative: open to WSU degree-seeking students.

*Prereq: Stat 251 or Stat 301 or Stat 416*
Stat 426  SAS Programming (3 cr)
Coverage of a variety of methods for data manipulation, data management, and programming in the SAS language. DATA step programming methods including data transformation, functions for numeric and character data, input of complicated data files, and do loop usage. Data management topics include concatenating data files, sorting and merging data files and ARRAY statement usage. SAS programming with SAS modules such as SAS/Graph, SAS/IML, and SAS/Macro language. Other topics in SAS programming, such as covering other SAS modules in depth.
Prereq: Stat 251 or Stat 301 or Stat 416

4. Change the curricular requirements of Statistics (Minor):

Stat 422  Sample Survey Sampling Methods (3 cr)
Stat 431  Statistical Analysis (3 cr)
One of the following (4 cr)
Math 160  Survey of Calculus (4 cr)
Math 170  Analytic Geometry and Calculus (4 cr)
One of the following (3 cr)
Stat 251  Statistical Methods (3 cr)
Stat 301  Probability and Statistics (3 cr)
Three of the following courses (9 cr):
Bus 421  Marketing Research and Analysis (3 cr)
Math 330  Linear Algebra (3 cr)
Math 451  Probability Theory (3 cr)
Math 452  Mathematical Statistics (3 cr)
Stat 433  Econometrics (3 cr)
Stat 456  Quality Management (3 cr)
Stat 514  Nonparametric Statistics (3 cr)
Stat 519  Multivariate Analysis (3 cr)

Courses to total 20-22 credits for this minor

5. Change the curricular requirements of Statistical Science (M.S.):

All students who wish to do graduate work in statistics should have a background in quantitative methods including Math 275, Analytic Geometry and Calculus III, and 6 hours of statistics including Stat 431 or equivalent. Additionally, students should have knowledge of at least one higher level programming language.

Master of Science, Major in Statistical Science major. Students seeking admission to the MS program in Statistical Science should have completed at least two semesters in college calculus comparable to Math 170 and Math 175, and two classes in applied statistics including Stat 431 or a comparable course. Familiarity with programming is expected, and familiarity with numerical or statistical computing environments is desirable. Students are not required to have an undergraduate degree in statistics.

Candidates must fulfill the requirements of the College of Graduate Studies and of the Department of Statistical Science. See the College of Graduate Studies section for the applicable general requirements for M.S. degree.

An individual graduate program is tailored for the student, but all students must complete a basic core requirement of 24 credits and either i) a thesis (Stat 500), ii) an internship report (Stat 598), or iii) a research course (6 credits of Stat 597). The core requirements are Stat 422, Stat 451, Stat 452, Stat 501 (1 credits), Stat 507, Stat 519, Stat 550, Stat 565, and Stat 597 (2 cr). A maximum of 6 credits of Stat 500 may be counted toward the thesis degree option.

FOR THE FACULTY’S INFORMATION

Correction to General Curriculum Report 276:

Other Informational Changes: